APPENDIX F – COMMENTS ON DEIS

COMMENT LETTERS RECEIVED FROM DEIS

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John P. Edwards	02/26/02	F-1	F-77
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Florida Department of State Division of Historical Resources	02/11/02	F-69	F-98

Dr. John P. Edwards
13614 110th Ave. Ct. East,
Puyallup, WA 98374-3311
253-686-5014

February 26, 2002

Jacksonville District
U.S. Corps of Engineers
Planning Division
Attn: Ms. Liz Manners
P.O. Box 4970
Jacksonville, FL 32232-0019

Subject: Draft EIS for the Lake Tohopekalega (Toho) extreme draw down and habitat enhancement project.

Dear Ms. Manners:

I have reviewed the December 2001 Draft Environmental Impact Statement (EIS) for the Lake Tohopekalega (Toho) extreme draw down and habitat enhancement project. The EIS appears to be comprehensive and designed to meet the objectives of the National Environmental Protection Act (NEPA). My evaluation identified several questions and three potential systemic problems that should be addressed so that the decision makers can more adequately make their decisions in accordance with NEPA.

The following discussion provides the basis for my analysis and recommendations. The Corps of Engineers has been directed by Congress to determine whether the existing water control management system for the Upper Kissimmee Chain of Lakes are advisable due to significant changed physical, biological, demographic, or economic conditions. The Corps is specifically referred to determine the need to modify the project or its operation for improving the quality of the environment; improving protection of the aquifer, and improving the integrity, capability, and conservation of urban water supplies. The purpose of this EIS is to evaluate three alternatives for resolving the problem of improving the habitat for fish and wildlife species on Lake Toho. To accomplish this improvement the Corps of Engineers (COE) South Florida Water Management District (SFWMD), and Florida Fish and Wildlife Conservation Commission (FFWCC) have proposed that Lake Toho be lowered; that organic and associated vegetation be removed; that the removed material be consolidated into both new in-lake islands and on land deposits; and that excess organic material be reduced by burning. The draft EIS identifies benefits that would promote the project objectives to include: reduction of muck and nuisance vegetation, improvement of habitat for recreational fishing, and improved access to the docks. Adverse and controversial impacts identified in the draft EIS are: in-lake disposal islands,

F-1

temporary limited boat access on and between the lakes during the draw down due to low water levels, and loss of water for natural and human downstream needs. Four endangered or federally threatened birds have been identified in the area; bald eagle, snail kites, Audubon's crested caracara, and wood stork. The following discussion will provide my analysis, comments, questions and recommended mitigation procedures so that the decision makers can better evaluate their objectives, alternatives, and mitigation procedures.

Cumulative effects.

The council on Environmental Quality defines cumulative effects as: " The impact on the environment which results from the increased impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." (40 CFR 1508.7). The CEQ has noted that cumulative effects analysis (CEA) includes:

(1) *Scoping*; focus on each affected resource, ecosystem, and human community by including past, present and future actions;
(2) *Describing the effective area*; look at each affected resource, ecosystem, and human community by focusing at truly meaningful effects; and
(3) *Determine the environmental consequences*; look beyond the life of the action, address additive, countervailing, and systemic effects, and address the sustainability of resources, ecosystems and human communities.

Cumulative effects that need further development and analysis to determine the environmental consequences in the Lake Toho EIS include:

Draw down and cleanup. This is the third draw down and cleanup operation of Lake Toho initiated since the creation of the Central and Southern Florida Flood Control Project. Each draw down was initiated to address problems associated with degraded fish and wildlife habitat. The degraded habitat occurs as a result of long-term stabilized water levels, excessive nutrient inputs, overgrowth, decomposition, and build-up of aquatic macrophytes and macroalgae. The COE, SFWMD and SFWCC's plan treats the problem as an independent end result for a single lake. The same problems develop after a period of time following each intervention in all the lakes. This activity should either be recognized as a cyclical activity or a more comprehensive plan should be developed to insure the continued health of the lake, or the lake should be allowed to develop naturally without any man-made intervention. The overall Upper Kissimmee Chain of Lakes should receive a programmatic EIS that addresses the systemic environment beyond the life of the current draw down action and the sustainability of resources, ecosystems, and human communities over a longer period of time (e.g., 20-50 years). (NEPA § 102(2)(C)). 1

Being Done

Burning organic material. The EIS plan calls for the removal of material from the drained portion of the lake bed. The organic material is then to be collected and burned. Smoke and water vapor released from open fires can contribute to smog, fog, or low cloud formations. The classic cloud or fog formation is generated by suspending water vapor and particulates in the air, a lifting or stirring action, and temperatures that are near the dew point. Fog is a cloud that is touching the ground. Water vapor is naturally present in the air and is enhanced by evaporation

from lakes and wetlands such as those found in this EIS. Winds of 3-5 knots are normally needed to develop a mixing action to produce fog. The moving action can come from winds, hot air rising from fires, solar heated land, or movement over mountains.

Temperatures in central Florida are cooler in the fall, winter, and early spring; thus reducing the associated dew point temperatures needed to form both clouds and fog. Lower temperatures are most prevalent during evening and early morning hours and the ambient temperatures increase with day light solar radiation. Evaporation from the lake and cooler ambient temperatures increase humidity and thus make the proximity of Lake Toho more susceptible to fog, low cloud formation, and smog.

2

Burning will not be used.

Consequently, burning of the organic material removed from Lake Toho could produce both smoke and water vapor. These two components could then contribute to the formation of fog, clouds, a local obscurant, or smog. The generation of fog, clouds, or local obscurant all affect visibility associated with aviation activities and are regulated by the Federal Aviation Administration (FAA). The contribution of SMOG would need to be evaluated by the Florida State Air Quality District.

The environmental effects of obscurants has a direct impact on air, land and water based visitors to the area who want to enjoy the aesthetic beauty of Lake Toho, but are denied the opportunity.

Not applicable - since there will be no burning

Aviation and airspace issues. There is no discussion of either aviation or airspace in the draft EIS. There are 12 airports, heliports, or seaplane bases either on or within 10 miles of Lake Toho. Two of the seaplane bases are located on the north end of Lake Toho. Over 148,000 aviation terminal operations occurred at the 12 aviation facilities during 2001. (Florida Department of Transportation airport database). The Everglades Turnpike, located 2-5 miles east of Lake Toho, is a major north-south visual flight route followed by visual flight rules (VFR) pilots. VFR aircraft operations over and around Lake Toho are constrained because of FAA controlled airspace that serves the Orlando International Airport that is 15 miles to the north. The lower floor of the class B airspace over Lake Toho is 1600 feet MSL over the northern half of the lake. A smaller section of airspace has a base of 2000 feet MSL in the north west corner of the lake. The southern half of the lake has class B airspace starting at 5000 feet MSL. Introduction of obscurants into class B controlled airspace is governed or prohibited by the FAA, although waivers can be obtained for such activities.

To determine if NEPA §102 requires consideration of a particular effect there must be a relationship between the effect and the change in the physical environment caused by the major federal action. The introduction of obscurants into the air next to and over Lake Toho will truely directly, indirectly, and systemically affect the environment. Since the FAA controlled airspace limits aviation operations in the area, an obscurant will cause VFR aviation operations to be lower or near sensitive or environmentally threatened species, thus endangering these creatures. Secondly, VFR flight operations could be curtailed all together because of reduced visibility in the region, thus denying visitors the aesthetic beauty of Lake Toho. Third, the float plane operations will be degraded or unable to operate because of the lower lake levels.

Recommend that coordination be initiated with the local aviation interests and the FAA to let them know about the proposed burning activity. The FAA may require posting a Notice to

Airman (NOTAM) prior to any burn activity that will produce an obscurant.

Interference with federally threatened birds. The draft EIS notes that Lake Toho supports a higher than average density of bald eagles. Eagles are most vulnerable to disturbance early in the nesting period. (Draft EIS par. 3.3). The draft EIS notes that the nesting period for bald eagles in this region extends from October 1 to May 15, thus overlapping the proposed project time. Both the U.S. Air Force and U.S. Army have conducted studies that evaluated the impact of low level aviation operations on nesting bald eagles. They also concluded that the eagles are most vulnerable during the early nesting period. A cumulative effect of ground operations and aerial activity could thus generate an adverse affect on the nesting bald eagles that would otherwise be acceptable if only one or the other activity were present.

Mitigation of environmental impacts is discussed in EQ § 1508.20. To mitigate the cumulative effect of air and ground operations, Recommend that the bald eagle nests be plotted on a detailed map so that pilots can identify the eagle locations. Secondly, recommend that copies of the map and a letter explaining the concern for the bald eagles be provided to each of the 12 airports, heliports, and seaplane bases in the Kissimmee-Lake Toho region.

This analyst does not have information available that discusses the impact of aviation activities upon the Audubon's crested caracara, Everglades snail kite, or wood stork. A similar evaluation of cumulative effects upon these birds should be discussed in the final EIS.

EIS document administrative and content changes.

The following changes reflect the recommendation made above and should be made to the *Summary of Direct and Indirect Impacts* chart on page 9 of the draft EIS:

1. **Add federal threatened species to the impacted column**. Discuss bald eagle, Audubon's crested caracara, and wood stork.
2. **Aesthetics**: Include possible smoke, smog, fog, and obscurant impacts.
3. **Navigation**: Add seaplane operations and impact.
4. **Socio-economics**: Add Environmental Justice; depravation of low income residents' subsistence food sources while the lake is drained. Denying visitors aesthetic beauty of Lake Toho and visual access to the lake and its ecosystem.

3

Thank you for providing me with the opportunity to comment on this project,

John P. Edwards, Ed. D.
13614 110th Ave. Ct. East
Puyallup, WA 98374-3311

Enclosure: Aviation facilities chart

Aviation facilities

Facility	Location	Point of contact
Air Ventures, Inc Heliport	N 28° 18' 42" / W 81° 27' 54"	Guy Rutland 4619 W. Irlo Bronson Hwy. Kissimmee, FL 34746
Escape Ranch Airport	N 27° 51' 46" / W 80° 57' 29"	James R. Fowler, Jr. P.O. Box 58 Kenansville, FL 34739
Florida Hospital Kissimmee Helistop	N 28° 18' 55" / W 81° 24' 21"	Larry Ramsdell 200 Hilda Street Kissimmee, FL 34742
Kissimmee Municipal Airport	N 28° 17' 23 / W 81° 26' 13"	Terry Lloyd 301 N. Dyer Blvd. Suite 101 Kissimmee Municipal Airport Kissimmee, FL 34741
Grand Cypress Resort Heliport	N 28° 22' 53" / W 81° 30' 47"	Charles W. Drew 60 Grand Cypress Blvd. Orlando, FL 32836
Magic Air Adventure	N 28° 20' 3" / W 81° 29' 21"	Eliot Gundry 5069 W. Irlo Bronson Hwy. Kissimmee, FL 34746
Orlando Hyatt House Heliport	N 28° 20' 2 / W 81° 32' 5"	Mel Bettcher 6575 W. Irlo Bronson Hwy. Kissimmee, FL 34747
Osceola Regional Medical Center Helistop	N 28° 17' 55" / W 81° 24' 39"	Greg Garren P.O. Box 422589 Kissimmee, FL 34742-2589
Osceola Sheriff's Office Heliport	N 28° 17' 34" / W 81° 21' 6"	Robert L. Yawn 400 Simpson Road Kissimmee, FL 34744
Stout International Airport & Seaplane Base	N 28° 15' 31" / W 81° 23' 2"	Richard D. Stout 1575 Pine Island Road Kissimmee, FL 34744
Toho Seaplane Base	N 28° 15' 1" / W 81° 23' 29"	Armond Rivard 606 N. Dyer Blvd. Kissimmee, FL 34741
Walker Ranch	N 28° 3' 8" / W 81° 24' 3"	The Celebration Company P.O. Box 10,000 Lake Buena Vista, FL 32820

(source: http://www.florida-aviation-database.com/scripts/fid/basic.cfm?nocache=20767.760682844607)

February 28, 2002

Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Duck,

4 The data that was used for the Alligator Chain of Lakes Drawdown (Alligator drawdown), for the MIKE-SHE predictive model, was incorrect/incomplete. Vital data regarding the topography, to name one, of the modeled area was either not included or represented incorrectly.

My farm, Sunset Tropicals (Sunset) is in a flood plane and is bordered by Fanny Bass Pond (wetlands), on the Toho side of the property.

The government agencies involved in the Alligator drawdown, South Florida Water Management District (SFWMD) and the Fish and Wildlife Conservation Commission f/k/a Florida Game and Freshwater Fish Commission (FWCC) insisted that Sunset would not be affected by the Alligator drawdown because we are in the Toho basin.

From April 1–14, 1998 SFWMD conducted the "test drawdown" for the Alligator drawdown. The water levels in the fish ponds at my farm immediately began dropping. By June, 1998 I had lost all but one or so feet of water in my ponds. By August, 1998 all ponds were dry.

5 Since the "test drawdown" of the Alligator drawdown totally drained me, even though I am in the Toho basin, it would stand to reason that the drawdown of the Toho basin, where my farm is located, would most certainly do the same.

The loss of water and finally the dry ponds were videotaped weekly. The videotapes were mailed/handed to all government agencies involved plus many more government agencies who were not directly involved. I have extensive documentation, and many individuals from the agencies, including Harkley Thornton, one of the Governing Board members for SFWMD, and Commissioner Charlie Bronson, Senator Charlie Bronson at the time and so on were actually on my farm and saw for themselves the dry ponds.

My wife and I attended many meetings where I was trying to make them understand/admit to what had happened at my farm. They insisted that the loss of water was due to evapotranspiration and/or outside influence. In a conspiratorial manner, all of the involved agencies fully cooperated with each other and continue to do so.

6 The model used for the Alligator drawdown was faulty at best. They have now built upon a faulty model to develop the model for the Toho drawdown. You can't get an accurate model when your baseline is not accurate.

Throughout Volume II of the DEIS it is stated "the reason is probably… ", "flows in the validation run may…", "the potential ET may be overestimated…", "the model probably represents…", "as a general assessment the model probably has a tendency to…", "A model can always be better and the same applies to the Lake Toho model. However, overall the model appears consistent…".

With all of these probablys and maybes, they some how conclude that Sunset will only loose 0.2 ft of water in worse case scenario as a result of the Toho drawdown. Unbelievable. Truly.

7 Where is the ERP from DEP to the FWCC? There is no record of it being applied for or issued. The FWCC intends to scrape 6.7 million cubic yards of muck from the lake bottoms and then build muck islands in the lakes. This is not muck removal, it is muck moving. If muck islands are such a good idea why are private citizens or developers not allowed to do this type of work? Why is the FWCC the only one allowed to make muck islands? Why can a private landowner only clear a small portion of his/her shoreline of vegetation? Why has DEP prosecuted so many private landowners on lakes for doing work in the littoral zone but allows the FWCC to dry out almost the entire lakes littoral zones? Why is this area protected from private disturbance but open to wholesale destruction by the FWCC?

8 Where is the CUP? On 11-6-2001 in the final order from Case No.:01-2900RP - Division of Administrative Hearings; Judge Alexander (*Osceola Fish Farmers Association Inc. v. South Florida Water Management District)* it states that the drawdown of lakes is a consumptive use of water, therefore requiring consumptive use permitting. It is a matter of law.

9 The Everglades Snail Kite, an endangered species will be adversely affected by the Toho drawdown because they will no be able to find food. The attitude of FWCC seems to be "Oh well," blatant disregard for the further endangerment of snail kites. U S Fish & Wildlife halted the last East Lake Toho Drawdown because the FWCC was in danger of illegally taking snail kites, why is West Lake Toho different?

10 In order to have an accurate model on which to base the effects of the Toho drawdown on the environment, private landowners, and the public in general, I request that USACOE place monitoring wells on all of the Tropical fish farms in Osceola County and do their own modeling. Maybe then the results will reflect the truth.

Sincerely,

Michael Klingensmith
3981 Doe Dr.
St. Cloud, FL 34772-9159
tel 407-892-1979/fax 407-891-1920

F-7

1 March 2001

James C.Duck
Or
To Whom It May Concern

I am writing you concerning the Draft of the Environmental Impact Statement for Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project. I am a landowner of the property in Kissimmee Park with a Legal Description of Sec.: 24 TWP.: 26 Rng.: 29 Subd #: 3670 Blk: 14 Lot: 105 on the Plat Book 1 Page 041. My Lot is at the end of Tohopekaliga Road on the W. Steer Beach. The 5 in the legal description is 344 feet X 165 feet of lakefront of lot 10. Being a taxpayer and a future homeowner I think this muck removal will greatly enhance the living on the lakeshore. I request to be sent all past and future information on the above mention project to my address of: 11

John T Rask
3836 Bowline Cir. Apt. 101
Kissimmee FL 34741~~2526~~ 2560

Also I request the following Questions answered for future planning: 12

1. What is the suggested depth of a house drinking well that will not be effected by the Drawdown? 13
2. In accordance with the draft the muck removal is in front of my property. How far up will this muck removal be removed to my property and can I remove the rest of the muck and weeds, between trees etc, during the Drawdown.
   Also request a 1-800 number to contact you all for future up-dates.

Thank You

John T. Rask

Florida Department of Agriculture and Consumer Services
CHARLES H. BRONSON, Commissioner
The Capitol • Tallahassee, FL 32399-0800

Please Respond to:

March 4, 2002

Ms. Liz Manners
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Subject: **Response to Draft Environmental Impact Statement (DEIS) on Proposed Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project**

Dear Ms. Manners:

The purpose of this letter is to provide comments to the Corps regarding the Draft Environmental Impact Statement (DEIS) for the proposed Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project. My staff has reviewed the document and supporting appendices, and the following comments are provided for your consideration:

14 (1) Page 3, Section 1.8, entitled, **"Permits, Licenses, and Entitlements"**- Lists a Florida Department of Environmental Protection (FDEP) aquatic plant management permit as the sole permit issued in lieu of a water quality certificate. Our understanding is the Alligator Lake extreme drawdown, which was conducted in 2000, required an Individual Environmental Resource Permit (ERP) that was issued to the then Florida Game and Freshwater Fish Commission. Given that Lake Toho is nearly five times as large as Alligator Lake, and the nature and extent of the proposed activities is similar to the aforementioned drawdown, this project should be permitted in a similar manner. In addition, a November 6, 2001 a Final Order (Case No. 01-2900RP) was issued by the Department of Administrative Hearing's Administrative Law Judge clarifying that there is no authority in enabling statutes to allow an agency to except certain lake drawdowns from Chapter 373, Part II (Consumptive Use Permitting) review. For these reasons, the proposed extreme drawdown should be evaluated under the purview of either ERP and/or CUP.

15 (2) Page 21, Section 3.11, entitled, **"Purpose of Water Regulation Schedule"** - Provides recognition for the fact that water levels in the Kissimmee Basin lakes have been regulated by C&SF project works since the 1960's, with the SFWMD identified as the local sponsor. As such, the proposed Lake Toho extreme drawdown must be consistent with water policies in the 1956 Kissimmee River Basin General Design Memorandum (KRBGDM) and congressionally authorized project purposes, including flood protection, water supply, preservation of fish and wildlife, recreation, navigation, prevention of saltwater intrusion, and water supply to the Everglades National Park. Specifically, we request that the KRBGDM's objective for "provision of water supply for agricultural uses in the area around the lakes and along the Kissimmee River" be recognized in the document.

(3) Page 29-31, Section 4.6, entitled, "**Surface Water and Groundwater**"- According to our Geographical Information System analyses using 1995 Florida Land Use, Cover and Forms Classification System, the principal land use surrounding Lake Toho is improved pasture, cow/calf operations. Using the document's groundwater drawdown computer modeling prediction, which limits potential impacts to 1.3 miles from the lake, the resulting cone of depression affecting groundwater levels is projected to be approximately 1 foot. Given that the predominant agricultural land use is cow/calf operations, it is not atypical for ranchers to excavate shallow livestock watering ponds for cooling and drinking purposes. In fact, the cow/calf industry's Best Management Practices manual, entitled, "*Water Quality Best Management Practices for Cow/Calf Operations*" specifies the development of alternative water sources to attract animals away from streams, drainage canals, and lakes to protect water quality. For these reasons, the modeled drawdown of livestock pond (surface) water in excess of one foot may be inconsistent with Chapter 40E-2, Florida Administrative Code and the associated Basis of Review criteria. 16

(4) Page 32-33, Section 4.9, entitled, "**Downstream Impacts (Kissimmee River)**" - Pursuant to SFWMD's Kissimmee River Restoration Project, specifically the completion of the Phase I backfilling of the C-38 canal resulting in the reconnection of approximately 15 miles of historic Kissimmee River channel and subsequent rehydration of thousands of acres of floodplain, the proposed lake drawdown must consider the environmental/hydrological impact(s) to the reconnected portions of the Kissimmee River and more specifically (revised) Operational Schedule flows through S-65 to the river. Published flow data (page 33, DEIS) notwithstanding, there should be more discussion on how the historic 90 percentile flow synchronizes with the revised Operation Schedule flows at S-65. 17

(5) Page 33-34, Section 4.10.2, entitled, "**Water Quality**" - Assumes a drawdown discharge of 90,000 acre-feet to the Kissimmee River (C-38); however, the previous subsection 4.9 states that "roughly 328,000 acre-feet of water" would be sent downstream. This apparent volumetric inconsistency should be reconciled. 18
Moreover, we concur with the assertion that the long-term benefits for enhanced water storage and water quality improvements should outweigh the potential short-term, temporary water quality impacts of the proposed extreme drawdown on the now adopted, Total Maximum Daily Load for Lake Okeechobee. One 19
significant question that the DEIS should resolve in this regard is whether the overall net phosphorus load analysis includes the potential for increased soluble phosphorus in response to lake rehydration (also known as Reservoir Response).

(6) Page 40, Section 4.18.5, entitled, "**Potential Benefit of Drawdown to Freeze Protection**" - Lists the long-term impact of the drawdown on freeze protection as positive by virtue of removing the dense plant growth/vegetative buffer which forms the littoral zone for Lake Toho. While we agree with the DEIS's assertion that the proposed drawdown facilitates habitat enhancement in the broad littoral zones impacted by the proliferation of nuisance/exotic aquatic plant species along this fringe, we do not agree with the 20
presumption that this vegetation has a significant impact and would "block the direct flow of air from the warm water to the groves". Emergent vegetation notwithstanding, the thermal storage capacity of water in an 18,800 acre open body of water, and its ability to release latent heat, is the "driving force" in providing passive freeze protection to associated agricultural lands. Additionally, land use analysis indicates that the predominant 21
agricultural land use adjacent to Lake Toho is cow/calf operations, not citrus groves as the document indicates.

22 (7) Page 3-1, Section 3 (Volume II), entitled, **"Model Building"** - Centers around the decision to use the Danish Hydraulic Institute's MIKE SHE integrated computer model to predict impacts and provide reasonable assurance to potentially affected landowners. The Florida Department of Agriculture and Consumer Services recommends that an explanation of the Corps decision to utilize this model over the United States Geological Service's MODFLOW model be included into the Final EIS. Moreover, should the MIKE SHE model assumptions fail and in-situ conditions (i.e., pond water levels) cause a loss to livestock watering infrastructure, a Contingency Plan that addresses both temporary pumping (refilling) activities and/or potential surface water alterations (e.g., deepening existing livestock watering ponds) would be an equitable option that should be clearly explained in the DEIS.

We appreciate this opportunity to provide comments on this important project. Please feel free to contact Mr. Bill Bartnick (850/414-1065) of the Department who is available to work with the Corps to provide additional information or assistance as needed.

Sincerely,

CHARLES H. BRONSON
COMMISSIONER OF AGRICULTURE

Charles C. Aller

Charles C. Aller, Director
Office of Agricultural Water Policy

CCA/aet

cc: Mr. Bill Bartnick
Mr. John Folks
Ms. Cherie Trainor (DCA State Clearinghouse)
Mr. Paul Whalen (SFWMD)

AUDUBON OF FLORIDA

Ordway-Whittell Kissimmee
Prairie Sanctuary
& Lake Okeechobee Sanctuaries
100 Riverwoods Circle
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Fax: 863/467-8460

3 Page FAX
Hardcopy to follow

Liz Mathews
US Army Corps of Engineers
Planning Division
PO Box 4970
Jacksonville, FL 32232-0019

March 4, 2002

Dear Ms. Mathews:

These comments concern the "Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project" Draft Environmental Impact Statement. The preferred alternative proposes to lower the lake's water level with gravity flow to facilitate removal of about 6.7 million cubic yards of organic material from an estimated 2,844 acres of exposed shoreline. This will be used to create 49 in-lake spoil islands (47 of 3 acres, one of 2 acres and one of 8 acres, totaling 151 acres of islands). To accomplish lowering the water level of Lake Tohopekaliga, connected lakes will be lowered concomitantly. This project is proposed because of on-going environmental degradation of the lake from stabilized water levels, and nutrient enrichment.

Audubon of Florida agrees that Lake Tohopekaliga is suffering serious environmental impairment due primarily to water level stabilization, and secondarily to nutrient enrichment. The EIS accurately identifies that water levels in the Kissimmee Chain of Lakes historically fluctuated between two and ten feet over short and long term cycles. Native flora and fauna were not only adapted to these conditions, they were dependent on them. This natural process of seasonal water-level fluctuation was replaced by stabilized lake levels that harm the biological communities of the lake.

Stabilized water levels were installed in the 1960s when construction of the C&SF project allowed water level control in these lakes. Because of the damage caused by this long-term management strategy, extreme drawdowns of Lake Tohopekaliga were necessary in 1971, 1979, and 1987. Similar drawdown projects were required on many lakes, including East Lake Tohopekaliga (1990), Lake Kissimmee (1977, 1996), Alligator Chain (2000), Lake Jackson (1994, 1995, 1997), and Lake Istokpoga (2001). Water level management that benefits the health of the lake should be included in the Scoping List (page 3) since it is identified as the primary problem that created the need for restoration in all of these cases. The next revision to this EIS should evaluate installing more naturally fluctuating water levels as a short and long-term restoration effort.

23

Concept of drawdown and muck removal

Audubon supports drawing Lake Tohopekaliga down to help restore its health. Unfortunately, drawdowns only create temporary results. This is the fourth proposed drawdown project for Lake Tohopekaliga in the past 32 years. Repeated actions to gain

temporary effects are *management* actions and should not be considered *restoration* actions. Because the preferred alternative will fill an estimated 151 acres of wetlands (and further filling could be requested in 10 years) as part of a management effort, Audubon does not support in-lake material disposal. Further, we do not recommend mitigating for the wetland filling because the "avoidance step" of permitting dictates removal of the spoil material.

24 The EIS rejects complete removal of spoil material on the basis of cost, but presents no data on cost. Removal costs should be included in the EIS to allow the reader to evaluate the various alternatives more accurately. Each acre of wetlands in Lake Tohopekaliga has value for fish and wildlife habitat and should be protected. The EIS should include a detailed evaluation of the loss of wetlands due to the creation of spoil islands.

The goal of this project, improving the health of Lake Tohopekaliga, is worthwhile. However, several results of the preferred alternative may adversely affect the biological communities of the lake and surrounding areas. Fish are to be the primary beneficiaries of this program, but could lose 151 acres of habitat. Endangered species such as Snail Kites and Wood Storks also would lose habitat under this plan. There are past projects that filled wetland acres in the Chain of Lakes, and future wetland-filling proposals for Lakes Kissimmee, Marion, and Hatchineha. The cumulative impacts section (Section 25 4.19) should include a discussion of past, present and future wetland losses from this project and projects in surrounding lakes. For mobile species such as wading birds, these impacts truly are cumulative and should be considered.

Effects on the Kissimmee River Restoration

The preferred alternative may adversely affect Kissimmee River restoration efforts. Using gravity as the main drawdown mechanism requires lowering Lake Kissimmee (and connected Lakes Hatchineha, Cypress and Tiger) to about 48 feet on February 15, which is 3 feet lower than the interim operating schedule (Figure 4c). The interim operating schedule for these lakes was designed to insure adequate water flow for the restored parts of the Kissimmee River by allowing higher water levels during the wet season. Higher levels create more storage and help insure an adequate supply of water during the dry season to meet Kissimmee River flow goals. Lowering these Lakes removes the storage, threatening the hydrology of the 16,000 acres of restored Kissimmee River floodplain.

26 Section 4.9 addresses downstream effects on the Kissimmee River using a "90% flow" metric. 90% of flow represents "10% less than normal," which are drier than normal conditions. Comparing projected water flows with dry conditions does not reveal how far below "average" the flows are likely to be. As it is, the preferred alternative even falls short of the 90% figure. This section should be revised to include data that illustrates what percent of flow the restored Kissimmee River is likely to receive compared to average flow.

Installing a pump at the S-61 Structure would allow Lake Tohopekaliga to be pumped down without the need to lower the lakes below it. Table 1 (Summary of Original Alternatives Considered) indicates that installing and operating a pump at the S-61 structure would cost less than $1 million. Considering the potential impacts to downstream wetlands, including the Kissimmee River floodplain, pumping is a better alternative and is financially feasible due to the environmental protection it affords. Section 4.9 should include an estimate of the risk of not providing adequate flows to the Kissimmee River for alternative 3. 27

Waterfowl and wildlife responses (p27)
This section is too short to adequately treat a large, important subject. For example, the statement "After habitat enhancement activities, littoral zones may be improved and may again provide the important forage base on which many of these wildlife and waterfowl depend for survival" is too general and omits the importance of water level patterns that wading birds require. Not only is shallow water needed for effective wading bird feeding, the pattern of declining water-levels is critical. In the Everglades (Frederick and Collopy 1989, Frederick and Ogden 2001), and on Lake Okeechobee (David 1994a and 1994b, Smith et al. 1995), a repeated finding is that nesting wading birds thrive not merely in shallow water, but with continuously declining water. During breeding season, rising water levels can flood nests and disperse prey, severely reducing or eliminating nesting success. The proposed alternatives do not provide for these specialized needs of wading birds during the drawdown or after the drawdown. As noted below, examining revisions in present water level management could address this issue during the drawdown period, as well as in the future.

In the greater Everglades ecosystem, we have lost and estimated 50% of our wetlands, yet 90% of our wading birds (Ogden 1994). Lack of appropriate lake hydropatterns has contributed to this decline. This EIS can be improved by predicting the responses of wading birds and other non-fish wetland dependent species to this project in light of their discreet ecological needs. Not only should "during-project" affects be weighed, but post project affects should be considered (e.g., will the fill remove habitat, will water level management sustain species of interest?). 28

Conclusions
Audubon of Florida supports the concept a drawdown to improve the health of Lake Tohopekaliga. However, Alternative 4w, "gravity flow with flexible refill," would cause unnecessary risk to downstream systems, particularly the 16,000 acres of restored Kissimmee River, and should be replaced by Alternative 3, "Lake Tohopekaliga, Only with Pump." Further, Audubon recommends that any organic material excavated from the lake should be removed with no filling of wetland habitat. Complete removal of organic materials allows 150 more acres of habitat restoration than if in-lake disposal is done, and prevents long-term loss of habitat for fish and wetland-dependant wildlife. 29 30

Audubon further recommends that the most beneficial alternative—better water level management—be evaluated in the revised EIS. The first drawdowns of Lake Tohopekaliga were done without mechanical treatment and yielded benefits—perhaps successive drawdowns could yield benefits comparable to mechanical treatment, at less cost, and without the need for wetland filling. In reviewing the repeated "extreme drawdown" projects over the years, it is clear that the USACE and SFWMD *can*, and perhaps should, fluctuate water levels more than presently occurs. With better water level management, ecosystem functions could be restored and the need for muck removal projects could be eliminated, or at least reduced. This alternative merits discreet and detailed evaluation. 31

A draft EIS for the "Comprehensive Analysis of the Kissimmee Chain of Lakes, Florida" is underway where the 16 main lakes will receive, probably for the first time, a comprehensive assessment of water management options that may include better water level management. This EIS process should be a priority for all agencies involved. We further recommend that the EIS team interact directly with the Lake Okeechobee Watershed Project Team (CERP) in modeling the entire watershed of Lake Okeechobee. The C&SF project was built 50 years ago and the Restudy was undertaken to update and improve it. This goal cannot be achieved fully for the Kissimmee Valley until the interconnected regions (Upper Chain of Lakes, the Kissimmee River, and Lake Okeechobee) are managed as part of one overall system. 32

Thank you for this opportunity to comment. If I can answer questions or help in any way, please contact me. We look forward to working with you to help return Lake Tohopekaliga to better health.

Sincerely,

Paul N. Gray

Paul N. Gray, Ph.D.

C: Jay Slack, USFWS
Ed Moyer, FWC
Paul Whalen, SFWMD
Richard Harvey, EPA

Literature Cited

David, P. G. 1994a. Wading bird nesting at Lake Okeechobee, Florida: an historic perspective. Colonial Waterbirds 17:69-77.

David, P. G. 1994b. Wading bird use of Lake Okeechobee relative to fluctuating water levels. Wilson Bulletin. 106:719-732.

Frederick, P. C., and M. W. Collopy. 1989. Nesting success of five ciconiiform species in relation to water conditions in the Florida Everglades. Auk 106:625-634.

Frederick, P. C., and J. C. Ogden. 2001. Pulsed breeding of long-legged wading birds and the importance of infrequent severe drought conditions in the Florida Everglades. Wetlands 21:484-491.

Ogden, J. C. 1994. A comparison of wading bird nesting dynamics, 1931-1946 and 1974-1989 as an indication of changes in ecosystem conditions in the southern Everglades. P. 533-570. *In* S. Davis and J. C. Ogden (eds.) Everglades: The ecosystem and its restoration. St. Lucie Press, Del Ray Beach, FL.

Smith, J. P. J. R. Richardson, and M. W. Collopy. 1995. Foraging habitat selection amond wading birds (Ciconiiformes) at Lake Okeechobee, Florida, in relation to hydrology and vegetative cover. Arch. Hydrobiol. Spec. Issues Advanc. Limnol. 45:247-285.

United States Department of the Interior
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OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
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March 4, 2002

ER 02/71

Ms. Liz Manners
U.S. Army Corps of Engineers
Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232

RE: Draft Environmental Impact Statement for the Lake Tohopekaliga, Extreme Drawdown and Habitat Enhancement Project, Osceola County, FL

Dear Ms. Manners:

General Comments

It is our opinion that the Draft Environmental Impact Statement (DEIS) for the Lake Tohopekaliga (Toho) Extreme Drawdown and Habitat Enhancement Project does not fulfill the purpose and intent of an Environmental Impact Statement (EIS). Section 1502.1 of the Council on Environmental Quality's (CEQ) Implementing Regulations clearly state the basic purpose of an EIS. That section states in part "...It shall provide full and fair discussion of significant environmental impacts...Statements shall be clear, concise, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses...." An EIS is intended to be an environmental disclosure document that identifies a range of appropriate alternatives and evaluates their impacts to the environment. The Department believes that this DEIS does not explore nor objectively evaluate all reasonable alternatives that would avoid or minimize adverse impacts. Moreover, we believe that the range of alternatives has been so constrained that the alternatives which were examined in detail essentially present no real differences in effect, other than the no action alternative.

33

The DEIS evaluates only three alternatives; the preferred alternative 4w, alternative 1, and a "no action" alternative. We believe, and the document indicates, that alternative 1 has almost identical benefits and impacts to Lake Toho and the region (Lakes Cypress, Hatchineha, and Kissimmee) as alternative 4w (the preferred alternative). The only differing environmental impacts between alternative 4w and alternative 1, as displayed in the "Summary of Direct and Indirect Impacts" contained on pages 9 and 10, are for downstream effects, and these appear to be insignificant during a "normal" year.

We recommend that additional alternatives, as outlined in Appendix C, should be thoroughly evaluated in this DEIS, particularly those alternatives that would minimize impacts to wetlands and fish and wildlife resources. For example, on page 7, the DEIS states that alternatives involving pumps were eliminated from detailed analysis due to logistical difficulties and costs, but we believe that such alternatives are likely to significantly reduce impacts on the watershed as a whole and to significantly reduce impacts to Department trust resources.

34 Although the DEIS states that particular alternatives, namely those using weirs or pumps to isolate Lake Toho, are more costly, we do not believe that the potential to reduce impacts to threatened and endangered species was adequately considered along with cost. The use of pumps or weirs would likely reduce the drawdown duration and/or isolate the drawdown to Lake Toho, and may substantially reduce impacts to the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) and its primary prey, the apple snail, in Lake Toho and the region.

35 We believe that the restoration of desirable native aquatic plant life has not clearly been demonstrated to be a direct benefit from the proposed action. As documented by Moyer *et al.* (1995), Lake Toho's vegetation communities reverted to dense monocultures of pickerelweed (*Pontederia cordata*) and cattail (*Typha* sp.) three years after a previous drawdown and muck scraping. The response of aquatic macrophyte communities after drawdowns includes distributions of native and exotic species such as alligatorweed (*Alternanthera philoxeroides*) and torpedograss (*Panicum repens*) (Holcomb and Wegener 1971). Water hyacinth (*Eichhornia crassipes*) infestations dominated the reflooded littoral zone within one year of a 1971 drawdown of Lake Toho (Williams and Moyer 1978), and after the Lake Jackson drawdown and muck removal program in 1994, water hyacinths became problematic and required treatment several months after refilling (FWC 1997).

36 The proposed water drawdown, vegetation and muck removal, and spoil island creation, itself, has not been shown to promote the restoration of native plant communities without aggressive post-drawdown chemical treatment and mechanical harvesting. Additionally, we believe an estimation of rates of muck re-accumulation should be included in the project plans in order to evaluate the long-term efficacy of muck removal for establishing desirable native plant communities. The section in the document outlining the need for the project clearly states that the principal cause of the degraded habitat is a result of long-term stabilized water levels and excessive nutrient input into the aquatic system, however, the document fails to discuss alternatives to address the problems.

37 Although the analysis and discussion of the Florida Department of Environmental Protection's (DEP) aquatic plant survey data are interesting, we are unsure that the DEIS' conclusions from the historical survey data can be supported, particularly when considered along with previous drawdowns. We believe that the data does not support the rationale that performing a drawdown has a positive effect on establishing a healthy native vegetation community, of desirable plant densities, in the lake. The study period for the Lake Toho aquatic plant survey was from 1983 to

1995. When analyzing these data, one must consider the drawdown that occurred in 1987. For example, acreage of emersed species, submersed species, and floating leaf species were generally quite low and in many cases appeared to be declining prior to the 1987 drawdown. It is not until
38 the period after the last drawdown (1988-1995) that there appears to be an increase in acreage of vegetation. We recommend discussing the DEP aquatic plant survey data in reference to the 1987 drawdown. Perhaps section 3.2.3 could clarify that the proposed drawdown and muck scraping project includes plans for aggressive vegetation management by way of herbicide and other treatments.

Specific Comments

Page 4, Section 2.1: Description of Alternatives - The section on interpreting lake regulation schedules is very useful. We recommend enhancing reader understanding by adding flowcharts to provide the reader with a visual representation of the actions.

Page 5, Section 2.1:Alternative 1 - The description of alternative 1 contained in this section does
39 not present the typical reader with enough information in order to provide a "clear basis for choice among options by the decision maker and the public" as is promised in the opening paragraph of this section and as required by section 1502.14 of the Implementing Regulations. The section states that the drawdown will be to 48.5 NGVD but leaves out the originating water level and the average depth of the lake. Such a level of detail is imperative to an understanding of the basic nature of the alternatives. That discussion should also reflect what happens in the real management of the lake levels as opposed to simply displaying the Regulation Schedule and assuming that schedule will be met. For example, the Regulation Schedule for Lake Toho displayed in Figure 3a shows an instantaneous rise in lake level on June 1 of five feet. Such an occurrence would have a devastating effect on the channels connecting those water bodies and the fish and wildlife resources contained therein. A more realistic discussion of water level management seems appropriate. The same comment applies to the discussion of alternative 4w.

In addition, section 1.8 of the DEIS states that the applicant proposes to extend the permit for
40 two years. If this occurs, the description of alternatives should discuss how water levels will be managed over this longer time frame.

Page 7-8, Section 2.3: Alternatives Eliminated from Detailed Evaluation - We believe this section contains serious omissions, inaccuracies, and assumptions that appear to be in contrast to
41 the mandates of the CEQ's Implementing Regulations. For example, the text states that Table 1 contains a summary of 12 alternatives, however, only 11 alternatives are contained in the table. In addition Table 1 presents a short description of features but neither the table nor the text explains why those features are required. The discussion of alternatives two and five refer to Table 1 for a description of the pumps, however, no discussion regarding the pumps, their capacity, or any vital information is displayed in the table. The discussion of alternatives 3 and 6 are lacking vital information. Similarly, the discussion of alternative 4z lacks the required data regarding water elevations required to understand the presented assumption. These deficiencies do not appear to

provide "Statements shall be clear, concise, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses" as is required by the Implementing Regulations.

Page 13, Section 3.1: General Environmental Setting - While the Department does not doubt that static lake levels and cultural eutrophication causes significant changes to occur within the biological community, the Existing Conditions section should provide appropriate literature citations to support specific assertions about formation of impassible barriers to fish, decline in biological productivity of "some fish species," decline in abundance of desirable aquatic vegetation, and reduction in sport fishery production and wading bird utilization. 42

noted *Page 13, Section 3.2.1: Overview* - On the seventh line of this section, the word **"tey"** should be correctly spelled **"they"**.

Page 15, Section 3.2.3: Conclusions presented by the DEP from the results of vegetation surveys conducted after previous drawdowns - We recommend clarifying section 3.2.3. If these are conclusions presented by DEP, were they part of a report, publication, or personal communication or are they conclusions from the DEP invasive plant data?

noted We recommend adding the word **herbicide** before treatments in the last sentence of section 3.2.3.

Pages 16-17, Section 3.4: Fish and Wildlife Resources - Please provide supporting citations for statements indicating a decline in desirable aquatic plants, plankton, insects, amphibians, forage fish, sport fish, waterfowl, and wildlife that have been attributed to dense growth of nuisance vegetation. 43

Page 19, Section 3.7: Water Quality - This section should provide a basic summary of historical trends and current water quality status, the major nutrient sources for the lake, and the current efforts to improve water quality of Lake Toho. This is particularly true since section 1.3 on page one clearly states that water quality issues, specifically nutrient loading, are one of the root causes of the problem proposed to be corrected. 44

Page 22, Environmental Effects - This section should present a discussion of all effects. Section 1502.16 of CEQ's Implementing Regulations require discussions of direct, indirect, and cumulative effects. In contrast to that mandate, this portion of the document confines discussions of effects to those expected directly in Lake Toho. Because the drawdown will also impact Lakes Cypress, Hatchineha, and Kissimmee effects which occur in those areas should also be discussed in this section of the document. Such discussions are notably absent especially during the natural systems in sections 4.2, 4.4, and 4.5, yet, such discussions appear in section 4.6 regarding water withdrawals. This inconsistency in the presentation of effects should be rectified. 45

Page 23, Section 4.2: Vegetation - This paragraph implies that the listed plants dominated Lake Toho shallows at some point in time, but are currently not present. However, surveys, as

summarized in Table 3, show that most of these species were recently documented in the littoral zone.

In addition, effects on vegetation in lakes Cypress, Hatchineha, and Kissimmee are not discussed in this section, yet drawdowns will also occur in these lakes as part of the proposed plans. Impacts to vegetation in those lake systems should also be discussed in order to outline the full
46 range of effects.

Page 26, Section 4.5.1: Fishery Responses - Because the proposed extreme drawdown and habitat enhancement project is intended to represent "A Fishery Management Program" (FWC 2000), this section of the DEIS is incomplete. The section references only two research studies to
47 describe the potential fishery benefits. We suggest including a thorough review of studies on the effects of drawdowns and muck scraping on recreationally important fisheries. We recommend that the following items be addressed:

- This section should include a review of the species valued by recreational anglers, their respective fish forage base, and current problems of each fishery. The units used to compare fishery enhancement should be kept constant for all the comparisons, *i.e.* fish/acre, pounds of fish/acre, or CPUE.

- The second sentence reads: "In response to the 1979 drawdown of Lake Toho, largemouth bass increased to nearly 70 harvestable fish per acre in vegetated areas by fall 1983, **and** increase of 400 percent compared to the 14 bass per acre present in 1978" should be changed to read: "In response to the 1979 drawdown of Lake Toho, largemouth bass increased to nearly 70 harvestable fish per acre in vegetated areas by fall 1983, **an** increase of 400 percent compared to the 14 bass per acre present in 1978."

- The fourth paragraph that describes an additional investigation by Dr. Mike Allen should be cited as found appropriate.

- In addition, discussions regarding effects in the other lakes that will be drawndown need to be presented.

Page 27, Section 4.5.2: Waterfowl and Wildlife Responses - This section does not provide a discussion of the expected responses of waterfowl and wildlife as a result of the proposed action.
48 This section also should include discussion of potential responses from other important aquatic organisms including bivalves, gastropods, insect larvae, plankton, and other invertebrates that are likely to be impacted by the proposed drawdown and muck scraping project. We believe that the inclusion of a review of the invertebrate response is important because study results from the Lake Toho drawdown in 1987 indicated that total macroinvertebrate taxa and diversity values were higher in control or unrestored sites (Butler *et al.* 1992). Prior to this, higher invertebrate densities were found in reflooded areas after another drawdown of Lake Toho, but densities decreased to pre-drawdown levels within two years (Wegener *et al.* 1974). Typically these

organisms form the basis for the food chain that impacts all fish and wildlife dependent on those base organisms.

In addition, effects to wildlife resources occurring in the other lake areas which will be drawndown need to be presented.

Page 28, Section 4.5.3: Disposal Sites - In order to adequately address the environmental effects of disposal sites, additional information should be provided, including data on spoil granulometry, forecasted vegetation succession on islands, and plans for exotic vegetation and erosion management of the spoil sites to improve habitat quality. The DEIS should also consider whether or not the disposal sites are intended to be used again during future muck scraping projects. In regard to spoil islands being used as bird rookeries, if spoil sites are not actively managed to support nesting habitat and to control public access and predators, they are unlikely to be successfully used as rookeries. We suggest planting native vegetation around and on spoil islands to increase their value as wildlife habitat and help to prevent erosion.

49

Page 34, Section 4.10.2: Downstream Effects - In the first sentence, the word **lakes** is used twice. This error should be corrected.

Noted

Page 34, Section 4.11: Hazardous, Toxic, and Radioactive Waste - The information presented in section 4.11 is not sufficient to make any judgements regarding the presence or absence of harmful levels of contaminants in Lake Toho sediments. Although reference is made to some heavy metal analyses of sediment samples by the FWC in 1986, those results are not presented in the document. Only three metals are mentioned as being 4 to 300 times lower than Florida State and U.S. EPA soil cleanup criteria for hazardous waste sites. Soil cleanup criteria such as these are residential/industrial guidelines for protection of human health and should not be used for evaluating risks to ecological receptors. The appropriate screening values to use in this situation are Florida DEP's Sediment Quality Assessment Guidelines (FDEP, 1994). Sediment Quality Assessment Guidelines (SQAGs) were developed for assessing sediment quality in Florida coastal waters, based on the probability of effects on aquatic organisms. The FDEP is currently in the process of developing freshwater SQAGs, but until those are available, the existing marine/estuarine SQAGs are the best screening values we have for this purpose.

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Noticeably absent from this section is any analysis of pesticide residues in the sediments, except for a statement that pesticides probably do not exceed "normal background for central Florida lake sediments." However, some sediments in central Florida have been found to contain high levels of organochlorine (OC) pesticides due to past agricultural practices. Lake Apopka, some 25 miles to the north, has experienced severe pesticide contamination due to decades of "muck farming" along its shores. We recommend the use of aerial photographs to determine whether any agricultural activities of this type have occurred within the immediate vicinity of Lake Toho.

This project is different from the typical dredging project, in that the water will be drawn down before dredging the sediments. Therefore, there is no potential for resuspension of sediments in the water column during the dredging process. However, the intent is to then use the dredged sediments to create in-lake islands. When exposed to an aerobic aquatic environment, wave action, and the percolation of rainwater through the spoil pile, any contaminants present in the sediments may be leached into lake waters. Therefore, there is some concern that pesticides or metals in the sediments may be made more bioavailable than they were when left in place on the lake bottom. Also, by removing the upper layers, dredging may expose older, more contaminated sediments. We recommend the taking of sediment core samples down to the depth of proposed dredging, to confirm the Corps' prediction of low contaminant levels. Sediment samples should be analyzed for metals, OCs and nutrients (phosphorus and nitrogen). These results and any previous sampling results should be presented as a table in or appendix to the EIS document, including maps showing all sample locations.

Page 41, Section 4.19: Cumulative Impacts - This section does not provide a complete summary of the cumulative impacts of this project. For example, although there is mention of the loss of wetlands, as being "considered already," the analysis is not adequately presented to the readers of the document. We recommend including a more comprehensive discussion of the potential
51 impacts on fish and wildlife populations, aesthetics, threatened and endangered species, and water quality. Additionally, we suggest evaluating the cumulative impacts to Lake Toho and the region (Lakes Cypress, Hatchineha, and Kissimmee) as these downstream lakes will also be drawn down in two of the alternatives presented. In reference to the last sentence in this section, while formal consultation will evaluate the cumulative impacts of the project on snail kites and apple snails, it will not evaluate the cumulative impacts on all other fish and wildlife that may be affected by the project.

Page 42, Section 4.23: Precedent and Principle for Future Actions - We realize that lake drawdowns and muck scraping have occurred in Lake Toho and other lakes; however, the volume of muck to be scraped and number of proposed spoil islands are much greater than previous
52 actions. Because the project proposes to remove 30 times more muck volume (6.7 million cubic yards versus 225,000 yards) over a much greater area, than the 1987 Lake Toho drawdown, we believe the proposed action would set a precedent in terms of project scope.

Page 42, Section 4.25: Compliance with Environmental Requirements - This section should
53 include a discussion regarding compliance with Executive Order 13186: Responsibilities of Federal Agencies To Protect Migratory Birds, January 10, 2001.

Page 42, Section 4.25.1: National Environmental Policy Act of 1969 - This section states that environmental information has been compiled and this document prepared. Subsequently, a conclusion is reached that the project is in compliance with the Act. In our opinion, the analyses conducted and the presentation made in the document is so deficient as to preclude a meaningful analysis of alternatives. Therefore, in compliance with section 1502.9(a) of the Implementing Regulations we recommend that all deficiencies, as noted in this letter of comment, be corrected and a revised draft be circulated for review.

Summary Comments

The Department recommends revising the DEIS so as to be more accurate and comprehensive in the description of the current project's potential impacts and benefits to the environment and include in the analysis alternatives that eliminate or minimize environmental impacts. This revision should include appropriate references to support cause and effect statements relative to the anticipated benefits and impacts of the project. Overall, it is our opinion that the DEIS does not provide a comprehensive analysis of the environmental effects, including impacts and benefits, of the proposed action. The DEIS does not present a complete evaluation of environmental impacts or a systematic analysis of alternatives to reduce, mitigate, or prevent adverse environmental impact or enhance the quality of the environment. Table 1 in the main body of the DEIS and Appendix C includes references to alternatives 3, 4z, 5, and 6, which were not throughly evaluated in the document. We believe that these alternatives would likely entail lesser environmental impacts to the region as a result of the proposed drawdown, and should therefore be analyzed fully in the DEIS. We believe that a more detailed analysis of the effects of the alternatives listed in Table 1 needs to be included in the body of the EIS. Based on the limited descriptions provided in Appendix C and meetings and telephone calls with the Corps and the FWC, we have identified alternative 3 or alternative 6 as our preferred alternatives, but would wish to review a more detailed analysis of these alternatives prior to making a specific selection.

The DEIS also lacks scientific references to support some of the assertions presented in the document and would be greatly improved by incorporating the results of a thorough review of published literature and internal agency reports. Therefore, in compliance with Section 1502.9(a) of the Implementing Regulations we recommend that all deficiencies, as noted in this letter of comment, be corrected and a revised draft be circulated for review. 54

If you should have any questions I can be reached at 404-331-4524.

Sincerely,

Gregory L. Hogue
Regional Environmental Officer

F-24

cc:
OEPC, WASO
FWSR4, Atlanta
FWS, Vero Beach FO

REFERENCES

Butler, R. S., E. J. Moyer, M. W. Hulon, and V. P. Williams. 1992. Littoral zone invertebrate communities affected by a habitat restoration project on Lake Tohopekaliga, Florida. Journal of Freshwater Ecology 7(3): 317-328.

Darby, P. C., P. L. Valentine-Darby, and H. F. Percival. 1998. Assessing the impact of the Lake Kissimmee Restoration on apple snails. Final Report. Florida Game and Fresh Water Fish Commission, Bureau of Nongame Wildlife; Tallahassee, Florida.

Florida Department of Environmental Protection (FDEP). 1994. Approach to the Assessment of Sediment Quality in Florida Coastal Waters, Volumes 1-4. FDEP, Tallahassee, Florida

Florida Fish and Wildlife Conservation Commission. 1997. Lake Jackson wildlife islands and their impact on biological production or the area. Prepared for the Department of Environmental Protection Permit No. 49-239879-4. Kissimmee, FL.

Florida Fish and Wildlife Conservation Commission. 2000. 2002 Lake Tohopekaliga habitat enhancement project - a fishery management program. Kissimmee, FL.

Holcomb, D. and W. Wegener. 1971. Hydrophytic changes related to lake fluctuation as measured by point transects. Proceedings of the 25th Annual Conference of the Southeastern Association of Game and Fish Commissioners, Tallahassee, FL.

Moyer, E. J., M. W. Hulon, J. J. Sweatman, R. S. Butler, and V. P. Williams. 1995. Fishery response to habitat restoration in Lake Tohopekaliga, Florida. North American Journal of Fisheries Management 15(3): 591-595.

Wegener, W., V. Williams, and T. D. McCall. 1974. Aquatic macroinvertebrate responses to an extreme drawdown. Proceedings of the Annual Conference of the Southeastern Association of Game and Fish Commissioners, Tallahassee, FL.

Williams, V. P., and E. J. Moyer. 1977. Lake Tohopekaliga drawdown and long-term fishery management proposal. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.

USEPA dated March 4, 2002

James C. Duck, Chief, Planning Division
Jacksonville District Corps of Engineers
Environmental Branch
P.O. Box 4970
Jacksonville, Florida 32232

Attention: Ms. Liz Manners
Planning Division

Subject: Draft Environmental Impact Statement for the Lake Tohopekaliga (Toho) Extreme Drawdown and Habitat Enhancement Project, Osceola County, Florida, CEQ #020013

Dear Mr. Duck

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA, Region 4 has reviewed the subject document, an evaluation of the ramifications of a proposal to modify the current water regulation schedule for Lakes Toho, Cypress, Hatchineha, and Kissimmee. These changes would result in extreme low water stages which are anticipated to improve the lakes' environmental resources as well as their physical and chemical characteristics. Two action alternatives (each using gravity flow) were eventually examined in some detail. Each was compared/contrasted with the no-action option. The preferred alternative (#4w) would entail a draw down to 49.0 feet,(NGVD) for all lakes followed by a flexible refill schedule. The latter capability was the primary reason it was selected in lieu of gravity flow (#1) alone. Required permits for habitat enhancement activities, e.g., muck removal, burning, discing and herbicide application to reduce dense vegetation, tussock formation and organic buildup on lake bottoms, would be obtained by the Florida Fish and Wildlife Conservation Commission (FWC).

The lakes' environmental problems are primarily the result of nutrient inputs from various development sources/activities and the abnormal stabilization of water levels (as compared to long-term historical norms). This nutrient loading has accelerated plant growth to the point that tussock formation, muck buildup, etc. ultimately reduced fish habitat/productivity. Stabilized water levels have also reduced the value of native littoral habitat by elimination of naturally occurring *Scirpus spp.* and by retarding the oxidation

of accumulating organic matter. The noted management changes in water levels seek to foster more normal seasonal fluctuations which, in turn, should improve the health of the lakes' littoral zone.

In general, EPA supports regulation changes which should improve the lakes' overall health. However, we believe the final document would be improved if the consequences both positive and negative of the 12 alternatives were described with sufficient detail to justify why 9 of the 12 options were eliminated from consideration. We understand that those eliminated would require the use of pumps, however, the estimated cost of pumps was only about 10% of the money budgeted or about 20% of the money that was currently available. (Page 38, section 4.17.3, and Table 1, Summary of Original Alternatives Considered.) Further, we acknowledge that there are some logistical difficulties attendant to using pumps, viz., transport/assembly, site selection, site preparation/construction, and site security,. compared with just employing passive means (gravity) to dewater the lakes. However, why do these logistical issues apparently subsume the more positive control (active management) that pumps would provide for water movement? Additional exposition is also needed regarding the eliminated alternatives to demonstrate that 4W is, in fact, the practicable alternative with the least adverse impact(s) on the aquatic ecosystem (*sensu Section 404*). In summary, the environmental impacts of each of the drawdown scenarios (duration and lake levels) for the with- and without pump should be described.

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The 1977 *Lake Management Plan for the Kissimmee Chain of Lakes* proposed a drawdown on the chain every 2 years, a one in 12-year cycle for each lake. The alternatives should be described in terms of how they relate to the schedule described in this plan. For example, if all four lakes are drawn down for this project, will that be sufficient for all four lakes for 12 years? The alternatives, including the no-action,, should also be described in terms of compatibility with the on-going U.S. Army Corps of Engineers study, the *Comprehensive Analysis of the Upper Kissimmee Chain of Lakes* (KCOL) (page 41 of the DEIS). In a related matter, the environmental impacts and/or benefits associated with high water levels in East Lake Toho resulting from the project should be analyzed.

56

Some significant project related effects are not evaluated in the EIS, viz., the impacts of in-lake muck disposal at approximately 47 sites (141 acres) together with how adverse impacts to endangered species will be minimized. Rather, they will be examined when the Section 404 permitting process for construction of the disposal islands is initiated and after endangered species consultation is started with the United States Fish and Wildlife Service. At a minimum, the final EIS should detail the significant points which will be raised in these two analyses, so that they can be examined by all interested parties. In a related matter, the EIS should assess the historical surveys of other wildlife species that currently use the lakes and discuss how they would be impacted by this and

potential non "in-lake" disposal options. Since the proposed alternative would result in the conversion loss of important littoral wetland habitat to disposal islands, it is important
57 for all parties (especially the ultimate decision-maker(s) of this project) to understand the trade-offs associated with in-lake disposal versus a transport option.

On the basis of our review a rating of EC-2 was assigned. That is, we have some
58 environmental concerns about the above matters which will require additional information for resolution. Thank you for the opportunity to comment on this proposal. If you have any questions, please contact Dr. Gerald Miller (404-562-9626) or Ms. Beth Burger (561- 616-8878) regarding NEPA procedural and wetland technical issues, respectively.

Sincerely,

151

Heinz J. Mueller, Chief
Office of Environmental Assessment

GUY & YUDIN
ATTORNEYS AT LAW

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WILLIAM E. GUY, JR.*
JOHN S. YUDIN**
BARBARA A. COOK***

* ALSO ADMITTED IN 9TH U.S. C.C.A.
** ALSO ADMITTED IN DISTRICT OF COLUMBIA
*** ALSO ADMITTED IN U.S.VIRGIN ISLANDS

November 15, 2001

Department of the Army - US Army Corps of Engineers
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Adam Stewart
James C. Duck
James Vearil

Re: Osceola Fish Farmers
Lake Toho drawdown EIS

Dear Mr. Stuart:

We understand that you are working on an EIS for the proposed drawdown of East Lake Tohopekaliga.

Enclosed is a copy of the final order from **CASE NO.: 01-2900RP - Division of Administrative Hearings; JUDGE ALEXANDER (*Osceola Fish Farmers Association, Inc. v. South Florida Water Management District)*** in which Judge Alexander found that the drawdown of lakes is a consumptive use of water, therefore requiring consumptive use permitting, and that SFWMD's proposed rule exempting lake drawdowns was an invalid exercise of delegated legislative authority.

59

As I think you know, our fish farm clients suffered a drastic loss of water from their ponds during the Alligator Lake drawdowns, contrary to the modeling based forecasts by SFWMD and the assurances from SFWMD to the Corps during the preparation of the EIS for the Alligator chain of lakes.

F-30

Accordingly, we believe the EIS for Toho needs to take a long hard look at such devastating drawdown effects and require consumptive use permitting and mitigation at least, if the drawdown is permitted at all.

Please bear in mind that well pumping may not serve as mitigation since that upsets the ph balance in the fish ponds and kills the fish.

60 The solution would appear to be to use hydraulic dredging for muck removal instead of the drawdown and scrape method.

Sincerely,

Signed in his absence by WEG, Jr. to avoid delay

William E. Guy, Jr.

WEG/kmb
cc: Osceola Fish Farmers Association, Inc.
Bill Bartnick, DACS w/encl.

F-31

COPIES FURNISHED:

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Joint Administrative Procedures Committee
Room 120, Holland Building
Tallahassee, Florida 32399-1300

Liz Cloud, Chief
Bureau of Administrative Code
Elliott Building
Tallahassee, Florida 32399-0250

NOTICE OF RIGHT TO JUDICIAL REVIEW

A party who is adversely affected by this Final Order is entitled to judicial review pursuant to Section 120.68, Florida Statutes. Review proceedings are governed by the Florida Rules of Appellate Procedure. Such proceedings are commenced by filing one copy of a notice of appeal with the agency clerk of the Division of Administrative Hearings and a second copy, accompanied by filing fees prescribed by law, with the District Court of Appeal, First District, or with the district court of appeal in the appellate district where the party resides. The notice of appeal must be filed within 30 days of rendition of the order to be reviewed.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ORLANDO SERVICE CENTER 1707 Orlando Central Parkway, Suite 200, Orlando, FL 32809
(407) 858-6100 • FL WATS 1-800-250-4250 • Suncom 358-6100 • Fax (407) 858-6121 • www.sfwmd.gov/org/exo/orlsc/index.html

PRO KCOL

March 8, 2002

Ms. Liz Manners
Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Ms. Manners:

Subject: Draft Environmental Impact Statement, December 2001
Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project
Osceola County, Florida

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for Lake Tohopekaliga in Osceola County, Florida.

As stated in the document's abstract, the DEIS "evaluates the environmental impacts of alternatives associated with a temporary deviation in water levels that would allow lake levels to be lowered in Lake Tohopekaliga (Toho) and three other lakes (Lakes Cypress, Hatchineha, and Kissimmee) for the purpose of improving habitat for fish and wildlife species."

Please find attached the South Florida Water Management District's comments, which address the technical and environmental aspects of the draft document. The comments are intended to assist the U.S. Army Corps of Engineers in enhancing the DEIS to result in a completed Final Environmental Impact Statement and a timely record of decision that approves the "project".

Please let me know if you should have any questions or concerns in that regard.

Sincerely,

William C. Stimmel
Lead Project Manager
Kissimmee Division

WCS/tcs
Attachment

c: Patricia Strayer, SFWMD
Paul Whalen, SFWMD
Marty Mann, FWCC
Lawson Snyder, FWCC

F-33

bc: John Fumero
Tommy Strowd
Terrie Bates
Ken Ammon
Jeanne Hall
Doug MacLaughlin
Ron Mierau
Tony Waterhouse
Rob Robbins
Ed Yaun
Marc Ady
Scott Burns
George Ogden
Matt Morrison
Chris Sweazy
Lou Toth
Joe Koebel
Steve Lin
Sally Kennedy
Nellie Morales
Stefani Melvin
Jim Golden
Tom Genovese
Rick Bower
Fred Davis
Pete David
David Birdsall
John Adams
George Horne
Larry Russell

DRAFT ENVIRONMENTAL IMPACT STATEMENT
December 2001

Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project
Osceola County, Florida

U.S. Army Corps of Engineers, Jacksonville District

Comments provided by the South Florida Water Management District pursuant to the public release of the above referenced document.

Volume I

1.5. RELATED ENVIRONMENTAL DOCUMENTS

Other relevant documents include "Central and Southern Florida, Kissimmee River, Florida, Final Integrated Feasibility Report and Environmental Impact Statement" and "Kissimmee River, Florida, Headwaters Revitalization Project, Integrated Project Modification Report and Supplement to the Final Environmental Impact Statement".

1.6. DECISIONS TO BE MADE

Since Lakes Cypress, Hatchineha and Kissimmee may be lowered below the regulation schedule as stated on Pages 5 and 6, shouldn't the deviation of these lakes be addressed in the EIS too?

2. ALTERNATIVES

Add this paragraph: Regardless of the alternative used, the drawdown process can be summarized in the following steps: 1) Lake stage lowering operations (drawdown). This is accomplished by gradually discharging approximately 90,000 acre-feet of water downstream 2) Muck removal and disposal operations of 6.7 million cubic yard of material and, 3) Lake refill operations.

2.1. DESCRIPTION OF ALTERNATIVES

Alternative 1. Paragraph 4, last sentence states: " A temporary structure with crest elevation 50 feet, NGVD may be constructed on Tiger Creek".

✓ What are the criteria to determine if a weir is needed? This needs to be included and the analysis as part of the EIS. If a weir is to be installed, it needs to be identified as a project requirement.

62 **Alternative 4W.** Tiger Creek will be lowered to 48 feet, NGVD when Lakes Cypress, Hatchineha and Kissimmee are lowered to 48 feet, NGVD.

✓ They all are on the same regulation schedule and hydraulically connected. See comment above.

Alternative 10.

✓ What water management schedule is used as the basis for analysis of Alternative 10, the "no-action alternative"? Since the completion of the first phase of the reconstruction of the Kissimmee River in February 2001 an interim regulation 63 schedule and operation rules has been used for Lakes Kissimmee, Hatchineha and Cypress. The intent of this schedule and rules is to reestablish headwater discharge flows that better represent a natural seasonal variability of flows to the reconstructed portion of the river. As a result of this interim schedule we have now had discharge through S65 of varying amounts depending upon lake stages.

✓ This report would be greatly enhanced if it includes a comprehensive evaluation of effects of the proposed project on the Kissimmee River restoration project area (a primary subject of this EIS).

64 2.4. SUMMARY COMPARISON OF ENVIRONMENTAL BENEFITS AND IMPACTS OF THE ALTERNATIVES

Page 9. The summary of direct and indirect impacts indicate that there are no differences between alternative 4w and alternative1, except for the downstream effects.

✓ This box should be placed first in order to stress the benefits of 4w over alt.1.

Socio-Economics – These effects are quantifiable.

✓ This report would be greatly enhanced if quantitative data were included.

Water Quality –

✓ Additional impacts to water quality may occur due to a reduction in the phosphorus assimilation capacity of the lake resulting from macrophyte removal. Phosphorus coming into the lake could potentially cause serious algae blooms. A similar event occurred on Lake Kissimmee following the 1996 drawdown. Inclusion of this 65 information does not necessarily reduce the view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

3.1. GENERAL ENVIRONMENTAL SETTING

✓ Historic conditions should be dated... Prior to the construction of the C&SF Project ... use a date like 1946 or a range such as 1900-1960.

A discussion on the following information needs to be placed in this paragraph:

✓ Hydrographs in Figure 11a-m (S61) and Figure 12 (20 years prior to the C&SF Flood Control Project) indicate that, except for 1962 when the low lake stage was 49 ft, the historic range of water level fluctuations in Lake Toho was 50-59 ft. Appendix B indicates that S61 wãs constructed during 1962-63, as such the 1962 low stage was due to construction of the Central and Southern Florida Flood Control Project and not a natural event. After the project, the regulation schedule consistently brings stage down to 52' NGVD. It appears that the low end of the current regulation schedule is very similar to historic lows. Given this direct hydrologic data, this report would be greatly enhanced if a complete explanation were provided on the proposed low lake elevation of 48' NGVD rather than 50-51" NGVD? 66

3.4. FISH AND WILDLIFE RESOURCES

These comments pertain primarily to the fish and wildlife portions of the EIS.

✓ In general, many statements are made to the effect that the project will produce improved habitat conditions for fish, wading birds, and waterfowl. It does not appear that any technical information or data has been included in this report to validate these statements. This report would be greatly enhanced and to protect the project from unjustified scrutiny if data and references were included. It is important from a credibility standpoint to cite studies that provide information showing improved habitat as a result of drawdown. If not lake drawdowns in particular, then at least some studies that describe optimal habitat conditions for foraging wading birds and over-wintering waterfowl, relating these to post-enhancement habitat on Lake Toho. There are many papers in the literature that could potentially be used as supporting documentation for these habitat improvements. 67

✓ The statement is made that "desirable aquatic plants, which formerly grew in the broad littoral zones, provided habitat for diverse and abundant planktonic, insect, amphibian, and forage fish species". This report would be enhanced if there were references to studies that support this statement. If no studies exist for Lake Toho in particular, then at least use other similar lakes or habitats to support this claim. References are made throughout to the decline in habitat quality that has occurred in Lake Toho and data should be provided to support this.

3.6. DOWNSTREAM (KISSIMMEE RIVER)

✓ This report could be greatly enhanced if this section is expanded to illustrate the connection between the ecosystems of the headwaters lakes and the downstream

river, especially since the restoration project is well underway. There needs to be a discussion of the hydrologic connection and the cause and effect issues. This would be very useful to those who are not intimately involved with the restoration project. Inclusion of this information does not necessarily reduce view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

✓ 68 The potential downstream linkage of the project need to discuss the implications of "no flow" and/or "extended very low flow" regimes on the reconstructed section of the Kissimmee River. Reestablishment of continuous flow is one of the hydrologic crit~~~ for restoration of the river and the authorized project. Continuous flow through the river channel has ecological implications for the restoration of physical, chemical, biological characteristics, and fish and wildlife habitat enhancement within the river channel itself, as well as the floodplain. Reestablishment of floodplain inundation characteristics (another restoration criteria) and associated restoration of floodplain biological communities and fish and wildlife habitat is dependent on continuous flow. These criteria and their linkage to ecological restoration are thoroughly discussed in the 1991 feasibility study that provided the basis for the authorization for the restoration project, so it should be a relatively simple task to use this information to discuss the potential impacts of proposed drawdown.

3.12. NAVIGATION & RECREATION

✓ 69 Based on stage data and observations during the drought of 2001, the absence of flow through the restored section of the Kissimmee River will affect navigation in this area. While this was a natural drought, which is very different than the "ordinary low stage" provision of the 1902 navigation authorization, it is likely that similar effects of a managed lower headwater lake levels could affect flows and associated river stages that may impact the navigation authorization. This report would be greatly enhanced if this information were included. Inclusion of this information does not necessarily reduce the view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

4.3. INVASIVE PLANT MANAGEMENT PROGRAM

✓ Plant genus names should be capitalized (see Page 24, paragraph 2). For example, Hydrilla should always be capitalized throughout the document.

✓ Page 25. The first paragraph mentioned February, March and April as the preferred chemical treatment months. In reality most of the treatments are done in June, July and August as indicated by the data on herbicide applications (see SFWMD database).

✓ It also mentioned that "since the 1990's, large-scale herbicide treatments have been conducted". The treatments have been conducted since the 1980's according to the data on herbicide applications (see SFWMD database).

✓ Based upon past experience, it is extremely probable that native and exotic nuisance plants will become established on the in-lake disposal islands if no maintenance program is in place (e.g. Coffee bean (Sesbania) and Dog fennel). An extensive commitment of an exotic and nuisance removal plan including eradication techniques, costs, frequency of visits, chemicals used, and who will do the work needs to be included as a project component. An ongoing monitoring program to address this issue should be set up. 70

4.5.2. WATERFOWL AND WILDLIFE RESPONSES

✓ Page 27. In the section of waterfowl and wildlife responses, more examples are needed on reptiles and amphibians inhabiting the area as well as the scientific names of quail and dove (just to be consistent with the rest of the paragraph). 71

✓ Statements are made about the potential improvement of the littoral zone after habitat enhancement, but no data is cited. Please see comments provided for Section 3.4.

✓ Great Egret scientific name has been changed from Casmerodius albus to Ardea alba.

✓ South Florida Water Management District has provided a map of the locations of Bald Eagle nests with regard to the construction activities. A discussion of the buffer zone for eagle nests and how construction activity will occur in the zone is recommended.

✓ Page 28, paragraph 2, spelling *"apply snails"* should read Apple Snails.

4.6.1. SURFACE WATER WITHDRAWALS

✓ "SFWMD staff has researched current domestic and agricultural *water* users in Lake Toho, Lake Hatchineha, Lake Cypress and Lake Kissimmee. There are three existing *water* use permits utilizing surface water from Lake Toho; one *water* use permit utilizing Lake Hatchineha surface water and one water use permit utilizing Lake Kissimmee surface water." P.29

replace "water" with "consumptive"

4.6.3. GROUNDWATER MODELING ANALYSIS

✓ 2nd paragraph, 2nd sentence, edit, " *The Lake Toho ISGM, ~~is~~ based on the Mike/She model results, ~~have~~* has *been proven...*

✓ second line from the top of Page 30; please delete the following phrase "Thus, the modeling, developed by DHI Water and Environment." 44H

4.7. SPREADSHEET ANALYSIS OF STAGES AND DISCHARGES

- ✓ Need to provide a further explanation for the "normal year" used in this analysis (e.g., rainfall data).

- ✓ Figure 4d suggests relatively high discharges from Lake Kissimmee during April-May and moderate flows during most of the following wet season. These are much higher and more consistent flows than are typical during most years and seem very questionable following a drawdown. The basis for these data needs to be explained more clearly and explicitly. 72

- ✓ Please clarify where and when the "approved lake regulation schedules contained in the Kissimmee River-Lake Istokpoga Basin Water Control Plan" and "Interim Operating Schedule for Lake Kissimmee" were used.

- ✓ The "historical 90% flow" criteria is based on flows that were exceeded 90% of the time and as such represent "drought" conditions in the historic Kissimmee. So simply providing these flows is tantamount to providing a drought and lesser flows would be equivalent to an extreme drought. This report would be greatly enhanced if a more thorough explanation on this topic were provided.

4.9. DOWNSTREAM EFFECTS

- ✓ This paragraph states that 328,000 acre-feet of water will be discharged to the Kissimmee River during the drawdown. Why is this figure different than what is stated in 4.10.2 (90,000 acre-feet)?

73

- ✓ Why was the regulation schedule for Alternative 1 used instead of 4w?

4.10.2. DOWNSTREAM EFFECTS (4.10. Water Quality)

- ✓ There was a spike of nutrient discharge associated with the last drawdown on Lake Kissimmee. The potential for this occurring with the proposed Lake Toho drawdown should be discussed in this section.

74

4.16. CULTURAL AND ARCHAELOGICAL RESOURCES

- ✓ Line 11 edit, ", *the Corps has determined that the project will not effect ~~on~~ historic properties...*"

4.17. (2) ANTICIPATED EFFECTS OF PREFERRED PLAN ON THE NATIONAL ECONOMIC DEVELOPMENT

- ✓ Please change the word pan to plan in the sentence reading "Anticipated effects of preferred pan".

4.17.3. EVALUATION OF PROJECT COSTS

✓ This report would be greatly enhanced if there were a consistent description and evaluation of the base drawdown project (Toho) and the optional additions (additional removal in Toho, Cypress, Hatchineha).

75 The EIS needs to evaluate one drawdown plan, what ever it is. In this section the Corps is evaluating the proposed 6.7 million cubic yards for all three lakes (Toho, Hatchineha and Cypress). Other sections analyze Lake Toho only, 4 million cubic yards. There needs to be consistency. In each section a different drawdown is described.

✓ If a temporary weir is required in Tiger Creek, the cost to install a temporarily weir at Tiger Creek between Lake Tiger and Lake Kissimmee should be included in the project costs.

4.19. CUMULATIVE IMPACTS

✓ "The cumulative effects of the loss of these wetlands were considered (or will be considered in the case of the permit modification) as part of determining whether or not to issue the Department of the Army Permit number 199805442 (IP-EB)." P.41

4.21. COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

✓ The statement that "stable water levels" have occurred and contributed to problems in Lake Toho is misleading. The upper range of water level fluctuation in the lake has been decreased relative to historic fluctuations, but lake levels are not stable.

4.25. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

✓ Compliance with the Water Resources Development Act of 1992, which authorized the Kissimmee River Restoration Project should be added.

5.1 PREPARERS

Please make the following revision:

Sally Kennedy, ~~Sr. Project Manager,~~ Sr. Planner, SFWMD

5.2. REVIEWERS

Please add the following reviewers from the SFWMD: Lou Toth, Chief Environmental Scientist; Nellie Morales, Biologist; Stefani Melvin, Biologist; George Ogden, Hydrogeologist; Marc Ady, Biologist; Ed Yaun, Engineer; David Birdsall, Land Manager, Doug MacLaughlin, Attorney, and Luna Ergas-Phillips, Attorney.

TABLES

Table 6, Mean Depth of Lakes at Proposed Drawdown Water Levels in Alternative 4W

✓ There is the potential for Lakes Cypress, Hatchineha and Kissimmee (Lake Tiger also, if weir not constructed) to reach an elevation of 48 feet, NGVD in zone B2. Lake Toho could reach 48.5 feet, NGVD in zone B2. The table needs to reflect the accurate water levels. This is important for freeze protection planning and for permitted consumptive users to know precisely how low the lakes can deviate from the existing regulation schedule and still be discharging down to 48 and 48.5 feet, NGVD respectively. 76

APPENDIX A- Department of Army Permit

✓ Attachment 9, this attachment presents the disposal areas in Lake Toho. There are proposed inlake disposal areas probably too close to the outlet point of St. Cloud Canal (C-31) and Shingle Creek. They may be subject to high flow conditions especially during high discharge that they will be subject to frequent erosion and scouring actions. Can these sites move further away from those outlets? 77

Volume II

Page 0-1 Executive Summary, paragraph 2, last sentence
And Page 1-2, paragraph 1, last sentence.

" The present Project is funded by SFWMD in support of Drawdown study"

This sentence is found in both places referenced above. It is unclear and misleading. It should be removed from the document or revised to read:

The Lake Toho Integrated Surface Ground Water Model developed by DHI, Inc was funded by SFWMD to support the FWCC's drawdown project and the U.S. Army Corps of Engineers Environmental Impact Study.

Page 0-1 Executive Summary, paragraph 4, and
Page 1-2 Background objectives, paragraph 3.

This sentence is found in both places referenced above.
Change the tense of the sentence to the past since this modeling was completed last April.

"The objective of the ~~present study~~ modeling effort was ~~is~~ to develop and..."

Page 0-2 Executive Summary, last paragraph

Not clear. Make following changes.

"In summary the findings of the modeling show ~~project is that~~ the extent of the groundwater impact zone..."

Page 0-3 Executive Summary Map
The map is clearly too small to read. It needs to be enlarged to the full-page size (8.5x11).

Page 1-2 Background Objectives, paragraph 2
" The proposed Lake Toho Drawdown Project ~~study~~ would temporarily..."

Page 3-25 under "Recharge and Discharge" section. The statement, " Along the Kissimmee River Valley in Osceola County the heads in the Floridan aquifer are evidently lowered as a result of discharges to the surficial aquifer". I think this statement is confusing and should be taken out.

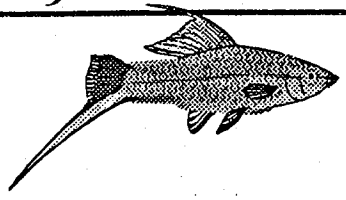
Page 3-38, Figure 3-18. This hand drawn graphic is not proportionally right in vertical scale. It doesn't look professional.

Page 5-2, Table 5-1. Portion of prints are illegible due to light color ink.

BLACKWATER FISHERY INC.

Breeders of Premium Livebearers

3460 Hickory Tree Rd.
St. Cloud, FL 34772



Phone (407) 892-7051
Fax (407) 892-5797

February 25, 2002

Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Duck,

The issues that were identified during the scoping phase of the EIS were outlined on page 3 they are;
a. Maintaining navigation channels
b. Minimizing adverse impacts to endangered species
c. In-lake disposal
d. Protecting ground water
e. Maintaining water supply for human and natural systems
f. Minimizing adverse downstream impacts
These issues were to be addressed or evaluated in this EIS.

Identifying the issues is one step of the process, clearly understanding them is another. It is clear that the truth around these issues was never investigated, rather they were glossed over so that this EIS could be issued.

78 Before we get to the outline, the matter of permits, or the lack of them should be addressed. I see no ERP permit or CUP permit in this document. If John Q. Public was going to scrape 6.7 million cubic yards of dirt anywhere they would be required to obtain an ERP. Why then wasn't one issued? The law states that one should be obtained. Does this mean that FWC is above the law? I think not.

As to the CUP permit, on November, 6th, 2001, Administrative Law Judge Donald R. Alexander ruled that "it is found that a lake drawdown for any purpose is a consumptive use of water." Apparently once again the agencies involved think they are above the law. One set of rules for the public, and one set of rules for these agencies? To ignore a court order does appear to be a blatant in your face disregard of the law.

Now to the scoping issues.

a. Maintaining navigation channels;

79 Page 22, states you have the duty of maintaining navigation according to the Kissimmee River Navigation Project, you are not clear as to whether or not navigation will be possible or not.

B. Minimizing adverse impacts to endangered species.

On page 25 section 4.4 Threatened and Endangered Species states; that the creation of in-lake disposal islands effectively reduce the contiguity of littoral marsh habitat and result in conversion of littoral habitat to upland habitat. This will adversely affect snail kite populations because they require clear and open foraging areas to visually search for apple snails.

80 Additionally, creation of "upland islands" in wetland habitat constitutes a loss of snail kite foraging habitat"

The indifference shown here is appalling. During the Alligator Lake drawdown, Resee Collins, from the Florida Audubon Society contacted me and asked if I had any gold apple snails, because he had a starving snail kite as a result of the drawdown. I gave him all the gold apple snails I had, which was about 300, at no charge. Not that I minded helping an endangered species, I was happy to, but why didn't the agencies in charge of wildlife help? Why was the public asked to help fix a problem that the agency in charge of protecting such animals caused? From the irresponsible response on page 25, I can see that any protected animal that is currently on the endangered species list is on their own.

c. In-lake disposal;

Common-sense was left out of this section. You are willing to spend millions of taxpayers dollars to scrape this build-up of organic sediments only to leave it in the lake. Then on page 28 section 5)"a health advisory for limited consumption of largemouth bass, bowfin, and gar and the potential detrimental impacts of leaving this material in the lake as spoil islands." The criteria of the public good comes into question here, and is not dealt with.

d. Protecting ground water;

Your answer here is highly suggestive. With the amount of modeling that went into this project you should know exactly what is going to happen with the ground water within the project area. On page 18 you state;"Since rainfall is the primary recharge and evapotranspiration the primary release from the surficial aquifer, it is during times of reduced rainfall and

81 increased evapotranspiration that the effects of a lake drawdown groundwater levels will be most severe. Lastly, discharge from the surficial aquifer can occur as seepage into drainage features(i.e. creeks, sloughs, ditches). If these drainage features are hydraulically connected to the lake and possess sufficiently low invert elevations, drawn down lake levels may promote the OVERDRAINAGE of groundwater resources TOWARDS the lake."

My point exactly. Doing the project during the dry season allows the most benefit for the project, but does not give any relief from the effects of the lower groundwater levels at the farms. The canal that runs though my farm is a major drainage feature. The only time I have ever seen the canal dry was during a Toho project. The only time.

Since my farm and the other fish farms in this area depend on groundwater to exist, the fact that the draw down WILL reduce the groundwater at these farms will have devastating effects. You can produce a model to say anything. I have the pictures to prove what a draw down can do to a fish farm. I sent pictures of dry ponds, and completely destroyed farms to you. You did not investigate these facts, instead you have relied on a projection model to tell you what the effects could be. The truth outweighs any model.

Under section 3.11 it states, "The SFWMD is also responsible for water supply allocation from the project, unless where specified by Federal law. Water control plans must blend all the varied, and often conflicting, project purposes. Compromise among competing purposes and objectives is a basic factor in multipurpose water resources project design and operation." You spell it out, but you do not deal with it. All of the fish farms have a CUP. We are legal water users. When this project takes the water from a legal water user, then mitigation is to be provided.

Under section 4.6 it reads;" It may be necessary for the FWC, as lead local sponsor to mitigate these impacts, if it is determined that the proposed water levels will impair the ability of the existing legal users to withdraw water with the permitted facility."
82 No mitigation has been offered.

Under section 4.6.2 "However, the temporary lowering of water levels in the lakes due to the proposed drawdown may require some agricultural interest to be mitigated to ensure a water supply source for their permitted irrigation needs."
Under the C&SF Project SFWMD by Congressional Order has to supply water for agricultural water supply. Being a legal water user a supply source of water is to be afforded me. The law states very clearly here that I as a legal water user have certain rights under the law, but as a result of some strange interpretation of that law, I suddenly have no rights. Again, one set of laws for the public, and another set of laws for government agencies.

e. Maintaining water supply for human and natural systems.
With the modeling provided by SFWMD, you feel assured that water supply for domestic use will be fine. You leave out one very important point, water quality. The farmers in this
83 area have all experienced very poor water quality, since the Alligator Lake drawdown. To think that this would not happen on a much broader scale with the Toho drawdown would be ludicrous. I see nowhere in the modeling process that saltwater intrusion or up coning was addressed. Of course that modeling would fall under the CUP process, which you have determined unnecessary.

The fact that should not be ignored is that the water flowing from my well after the Alligator Lake drawdown was radically different. The fish on my farm started dying in droves. Whole ponds died. I have been fish farming for 31 years, and had never experienced this problem. I contacted the Tropical Aquaculture Lab and after their analysis it was determined that the water coming from my well was killing my fish. I have the documentation to prove this. The other farms had similar problems. My well is almost 20 years old, and I never

had a problem with the water from it, until the drawdown on Alligator Lake.

Up coning, and saltwater intrusion are major risks and should be evaluated throughly. Damage that will never be reversed occurred here. This kind of damage could occur in the wells that supply the drinking water for many people. This is serious, the potential could be disastrous, is this the type of risk you are willing to take for this project?

f. Minimizing adverse downstream impacts;
After the Alligator drawdown, Lake Okeechobee had some definite adverse effects. Laws were passed as a result. With the amount of water that would be released turbidity through
84 the newly restored Kissimmee River Project would obviously be of concern. The effects on the Indian River Lagoon will again be devastating, as it has been in the past. Once again, it would appear that one set of laws applies to the public, and another applies to government agencies.

In conclusion, it appears that the public good issue, the environmental issue, the endangered species issue, the ground water issue, the water supply issue, and the overall adverse impacts have been ignored, or at least not sufficiently addressed. It also appears that the laws that were established to address such issues, have been liberally interpreted. The fact is that the government caused the problems, by structural means, and canals, and heavy runoff, and can only see one way of solving the problem they created. Maybe, it is time to think of a more environmentally friendly way of achieving your goals.

Sincerely

Donald Walther

Donald Walther, Director
Osceola Fish Farmers Association, Inc.

enclosure;
State of Florida
Division of Administrative Hearings
Final Order

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

Judy Ludlow
Bureau of Invasive Plant Management
3900 Commonwealth Blvd.
MS 705
Tallahassee, FL 32399
850-488-5631

March 11, 2002

Liz Manners
USACE
Planning Division
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Ms. Manners:

Thank you for the opportunity to review the Draft EIS for the Lake Tohopekaliga Drawdown, Volume 1. I have attached a copy of a few pages from the EIS indicating suggestions and comments. Additional comments are listed below.

On pages 13, 15, and 23 I indicated a few statements that I thought would be made stronger with references, or personal communications, etc. with an "R."

On page 13, 3.2.1, first paragraph, *"Tussocks can range in size from ½ acre to several acres size."* Tussocks are floating mats of vegetation and can be much smaller than ½ acre. Even a tussock 0.1 acre in size can be troublesome if it is blocking a boat ramp.

On page 13, 3.2.1 second paragraph, *"Species that benefit from stabilized water levels include...."* Hydrilla, and wild taro do not need "stabilized" water to proliferate. They can, and do, become abundant in many waters with many different water quality and water level characteristics. Also, is "burhead bulrush" burhead sedge (*Scirpus cubensis*)?

On page 13, 3.2.1 second paragraph, *"Spatterdock, American lotus, water hyacinths, and burhead sedge also expand... These plants have extensive root systems, which hold together muck..."* Water hyacinth should be removed from that sentence as they expand regardless of stable water, and they have floating roots that do not "hold together muck."

On page 14, 3.2.1 top of page, *"The acreage of exotic and native plants on the Kissimmee Chain has been collected by..."* The "Bureau of Invasive Plants " should be replaced with "Bureau of Invasive Plant Management."

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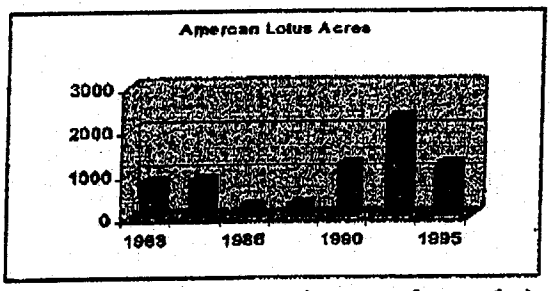
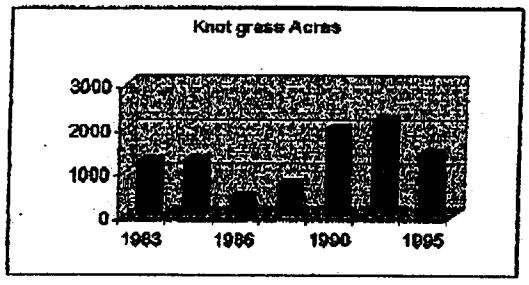
On page 14, 3.2.2, *"Analysis and Discussion of DEP Invasive Plant Data... "* I do not agree with all the trends indicated. For example, I graphed the data (taken from table 3) for lotus and knot grass below, and they do not show generally "stable" numbers for lotus and "declines" for knotgrass as described in the text.





Also, southern cut grass (*Leersia hexandra*), indicated to have a "general increase," only has one data point (0.1 acre) listed on table 3! I suggest that data be reviewed for all the plants discussed in this section.

On page 14, 3.2.2, under subheading *"Increase in submersed species"*, *"Coontail and bladderwort have been expanding in the open areas behind the vegetation... "* It is unclear as to whether the author of this text views this as desirable or undesirable. The Bureau of Invasive Plant Management considers this plant trend desirable if native plants are growing in lieu of hydrilla.

On page 15, 3.2.3, *"CONCLUSIONS PRESENTED BY DEP FROM THE RESULTS OF VEGETATION SURVEYS CONDUCTED... "* DEP, to my knowledge, did **not** present any "conclusions" to the USACE about results of drawdowns! Please correct this heading. Perhaps "Vegetation Response After Previous Drawdowns" is more accurate?

On page 23, 4.2, *"The drawdown would also allow the control of nuisance aquatic plants, such as hydrilla... water hyacinth... and American lotus... which proliferate under the unnatural static lake level conditions."* This statement contradicts the trend analysis referenced above stating that lotus acres were "stable." Also, hydrilla and water hyacinth do not need "static" water to proliferate. These species can, and do, become abundant in many waters with many different water quality and water level characteristics. Finally, the control of hydrilla and water hyacinth is actually more efficient *before* a drawdown. If hydrilla is left unmanaged, then more of the deeper water sections of the lake may become infested as the drawdown progresses. Hyacinths need to be under maintenance control before a drawdown, because they will become inaccessible for treatment during the drawdown, and as the lake re-fills, hyacinth seeds will germinate, sometimes prolifically, necessitating immediate control. Aquatic plant managers around the state are witnessing this as many Florida lakes are currently easing out of drought.

On page 23, 4.2, *"During the drawdown, control measures would also focus on preventing the spread... "* What is meant by "other river basin areas," and who would be doing the work?

On page 24, 4.3, under the subheading *"Detection," "Levels of invasive plant species..."* and *"Agency personnel establish..."* The word "establish" in both sentences should be replaced with "inventoried."

On page 24, 4.3, under the subheading *"Management," "Funding for management efforts comes from federal, state, and local agencies... the Upland Invasive Plant Program (solely funded by FDEP)."* The words in parenthesis "solely funded by FDEP" should be deleted, as matching funds are often part of the management project.

On page 24, 4.3, under the subheading *"Management," "Floating aquatic plant management is..."* This sentence is more accurate if the word "Floating" is deleted and the sentence begins with the word "Aquatic."

On page 25, 4.3, *"Harvesters are used to cut trails through areas for boat access"* This sentence is misleading. Harvesters have rarely been used to cut trails through hydrilla on the Kissimmee chain.

On page 25, 4.3, *"Results of the winter treatment are visible..."* Results of the winter/spring treatment are visible anywhere from late summer to the following winter, depending on many variables.

On page 25, 4.3, the sentence beginning *"Depending on water level, a temporary schedule deviation may be requested to decrease the water levels in order...."* should read: Depending on water level, a temporary schedule deviation may be requested ~~to decrease the water levels~~ in order..." because sometimes (for example, this year) only discharge rates are temporarily modified.

85

Also, as we discussed earlier, please remove my name, *"Judy Ludlow"* from the list of preparers, as I am not an author of this report.

Please do not hesitate to contact me if you have any questions about my comments. Thank you again for the opportunity to review this report.

Sincerely,

Judy Ludlow
Biological Scientist

/jl

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STATE OF FLORIDA

DEPARTMENT OF COMMUNITY AFFAIRS

"Dedicated to making Florida a better place to call home"

JEB BUSH
Governor

STEVEN M. SEIBERT
Secretary

April 16, 2002

Mr. James C. Duck
Chief, Planning Division
Department of the Army
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

RE: Department of the Army, Corps of Engineers - Draft Environmental Impact Statement - Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project - Volumes I and II - Osceola County, Florida
SAI: FL200201111375C

Dear Mr. Duck:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335,4341-4347, as amended, has coordinated a review of the above-referenced project.

86 The South Florida Water Management District's (SFWMD) staff recommends that the technical and environmental issues described in the enclosed SFWMD comments be addressed in the draft Environmental Impact Statement. Please refer to the enclosed SWFWMD comments.

87 The Florida Department of Agriculture and Consumer Services (FDOACS) has provided comments that were transmitted directly to the Corps on March 4, 2002. The issues identified in the enclosed comments should be addressed in the final Environmental Impact Statement (EIS) for the proposed Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project. Please refer to the enclosed FDOACS comments.

2555 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100
Phone: 850.488.8466/Suncom 278.8466 FAX: 850.921.0781/Suncom 291.0781
Internet address: http://www.dca.state.fl.us

CRITICAL STATE CONCERN FIELD OFFICE
2796 Overseas Highway, Suite 212
Marathon, Florida 33050-2227
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COMMUNITY PLANNING
2555 Shumard Oak Boulevard
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(850) 488-2356

EMERGENCY MANAGEMENT
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(850) 413-9969

HOUSING & COMMUNITY DEVELOPMENT
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 488-7956

The Department of Environmental Protection (DEP) notes its December 14, 2001 letter 88 which recommended a thorough evaluation of the effects of the proposed drawdown and habitat enhancement including impacts to downstream water quality and quantity. However, the draft EIS does not address the potential for increased phosphorous loading to the downstream system. In addition, the benefits of the proposed in-take disposal sites should be compared to the potential cost of increased invasive plant management efforts. If muck removal exceeds the 89 three-foot limit authorized by the existing permit, an Environmental Resource Permit issued by 90 the DEP's Orlando office will be required. Please refer to the enclosed DEP comments.

The Department of State (DOS) notes that the habitat enhancement project may adversely affect significant archaeological resources; therefore, an archaeological consultant should be 91 recruited to developed a plan, make periodic site visits, and to identify the sensitive areas of the lake. Measures should be taken to avoid resource impacts to the greatest extent practicable and mitigation proposed to offset any unavoidable adverse impacts. In addition, DOS recommends the development of a short information training session for the heavy equipment operators that identify steps that should be taken and expectations of findings during the demucking activities. Please refer to the enclosed DOS comments.

Based on the information contained in the referenced project and the enclosed comments 92 provided by our reviewing agencies, the state has determined that the referenced project is consistent with the Florida Coastal Management Program.

Thank you for the opportunity to review this project. Should questions arise regarding this letter, please call Ms. Jasmin Raffington at (850) 922-5438.

Sincerely,

Shirley W. Collins, Acting Administrator
Florida Coastal Management Program

SWC:jj

Enclosures

cc: Charles C. Aller, Florida Department of Agriculture and Consumer Services
William C. Stimmel, South Florida Water Management District
Marlane Castellanos, Department of Environmental Protection
Janet Snyder Matthews, Florida Department of State

SAI # FL20020111375C

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning Division
Environmental Branch

JAN 08 2002

Dear Sir or Madame:

Pursuant to §1503.1 of Title 40 of the Code of Federal Regulations, the U.S. Army Corps of Engineers is requesting comments on the Draft Environmental Impact Statement for the Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project.

In accordance with §1506.6, of the above-mentioned regulation, comments should be received no later than March 4, 2002.

If you have any questions, please contact Ms. Lizabeth Manners or Ms. Catherine Byrd of my staff at 904-232-3923 or 904-232-2016, respectively.

Sincerely,

James C. Duck

James C. Duck
Planning Division

Enclosure

F-53

FL20020111375C

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ORLANDO SERVICE CENTER 1707 Orlando Central Parkway, Suite 200, Orlando, FL 32809
(407) 858-6100 • FL WATS 1-800-250-4250 • Suncom 358-6100 • Fax (407) 858-6121 • www.sfwmd.gov/org/exo/orlsc/index.html

PRO KCOL

March 8, 2002

Ms. Liz Manners
Planning Division
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Ms. Manners:

Subject: Draft Environmental Impact Statement, December 2001
Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project
Osceola County, Florida

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for Lake Tohopekaliga in Osceola County, Florida.

As stated in the document's abstract, the DEIS "evaluates the environmental impacts of alternatives associated with a temporary deviation in water levels that would allow lake levels to be lowered in Lake Tohopekaliga (Toho) and three other lakes (Lakes Cypress, Hatchineha, and Kissimmee) for the purpose of improving habitat for fish and wildlife species."

Please find attached the South Florida Water Management District's comments, which address the technical and environmental aspects of the draft document. The comments are intended to assist the U.S. Army Corps of Engineers in enhancing the DEIS to result in a completed Final Environmental Impact Statement and a timely record of decision that approves the "project".

Please let me know if you should have any questions or concerns in that regard.

Sincerely,

William C. Stimmel
Lead Project Manager
Kissimmee Division

WCS/tcs
Attachment

c: Patricia Strayer, SFWMD
Paul Whalen, SFWMD
Marty Mann, FWCC
Lawson Snyder, FWCC

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DRAFT ENVIRONMENTAL IMPACT STATEMENT
December 2001

Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project
Osceola County, Florida

U.S. Army Corps of Engineers, Jacksonville District

Comments provided by the South Florida Water Management District pursuant to the public release of the above referenced document.

Volume I

1.5. RELATED ENVIRONMENTAL DOCUMENTS

Other relevant documents include "Central and Southern Florida, Kissimmee River, Florida, Final Integrated Feasibility Report and Environmental Impact Statement" and "Kissimmee River, Florida, Headwaters Revitalization Project, Integrated Project Modification Report and Supplement to the Final Environmental Impact Statement".

1.6. DECISIONS TO BE MADE

Since Lakes Cypress, Hatchineha and Kissimmee may be lowered below the regulation schedule as stated on Pages 5 and 6, shouldn't the deviation of these lakes be addressed in the EIS too?

2. ALTERNATIVES

Add this paragraph: Regardless of the alternative used, the drawdown process can be summarized in the following steps: 1) Lake stage lowering operations (drawdown). This is accomplished by gradually discharging approximately 90,000 acre-feet of water downstream 2) Muck removal and disposal operations of 6.7 million cubic yard of material and, 3) Lake refill operations.

2.1. DESCRIPTION OF ALTERNATIVES

Alternative 1. Paragraph 4, last sentence states: " A temporary structure with crest elevation 50 feet, NGVD may be constructed on Tiger Creek".

✓ What are the criteria to determine if a weir is needed? This needs to be included and the analysis as part of the EIS. If a weir is to be installed, it needs to be identified as a project requirement.

Alternative 4W. Tiger Creek will be lowered to 48 feet, NGVD when Lakes Cypress, Hatchineha and Kissimmee are lowered to 48 feet, NGVD.

✓ They all are on the same regulation schedule and hydraulically connected. See comment above.

Alternative 10.

✓ What water management schedule is used as the basis for analysis of Alternative 10, the "no-action alternative"? Since the completion of the first phase of the reconstruction of the Kissimmee River in February 2001 an interim regulation schedule and operation rules has been used for Lakes Kissimmee, Hatchineha and Cypress. The intent of this schedule and rules is to reestablish headwater discharge flows that better represent a natural seasonal variability of flows to the reconstructed portion of the river. As a result of this interim schedule we have now had discharge through S65 of varying amounts depending upon lake stages.

✓ This report would be greatly enhanced if it includes a comprehensive evaluation of effects of the proposed project on the Kissimmee River restoration project area (a primary subject of this EIS).

2.4. SUMMARY COMPARISON OF ENVIRONMENTAL BENEFITS AND IMPACTS OF THE ALTERNATIVES

Page 9. The summary of direct and indirect impacts indicate that there are no differences between alternative 4w and alternative1, except for the downstream effects.

✓ This box should be placed first in order to stress the benefits of 4w over alt.1.

Socio-Economics – These effects are quantifiable.

✓ This report would be greatly enhanced if quantitative data were included.

Water Quality –

✓ Additional impacts to water quality may occur due to a reduction in the phosphorus assimilation capacity of the lake resulting from macrophyte removal. Phosphorus coming into the lake could potentially cause serious algae blooms. A similar event occurred on Lake Kissimmee following the 1996 drawdown. Inclusion of this information does not necessarily reduce the view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

3.1. GENERAL ENVIRONMENTAL SETTING

✓ Historic conditions should be dated... Prior to the construction of the C&SF Project ... use a date like 1946 or a range such as 1900-1960.

A discussion on the following information needs to be placed in this paragraph:

✓ Hydrographs in Figure 11a-m (S61) and Figure 12 (20 years prior to the C&SF Flood Control Project) indicate that, except for 1962 when the low lake stage was 49 ft, the historic range of water level fluctuations in Lake Toho was 50-59 ft. Appendix B indicates that S61 was constructed during 1962-63, as such the 1962 low stage was due to construction of the Central and Southern Florida Flood Control Project and not a natural event. After the project, the regulation schedule consistently brings stage down to 52' NGVD. It appears that the low end of the current regulation schedule is very similar to historic lows. Given this direct hydrologic data, this report would be greatly enhanced if a complete explanation were provided on the proposed low lake elevation of 48' NGVD rather than 50-51" NGVD?

3.4. FISH AND WILDLIFE RESOURCES

These comments pertain primarily to the fish and wildlife portions of the EIS.

✓ In general, many statements are made to the effect that the project will produce improved habitat conditions for fish, wading birds, and waterfowl. It does not appear that any technical information or data has been included in this report to validate these statements. This report would be greatly enhanced and to protect the project from unjustified scrutiny if data and references were included. It is important from a credibility standpoint to cite studies that provide information showing improved habitat as a result of drawdown. If not lake drawdowns in particular, then at least some studies that describe optimal habitat conditions for foraging wading birds and over-wintering waterfowl, relating these to post-enhancement habitat on Lake Toho. There are many papers in the literature that could potentially be used as supporting documentation for these habitat improvements.

✓ The statement is made that "desirable aquatic plants, which formerly grew in the broad littoral zones, provided habitat for diverse and abundant planktonic, insect, amphibian, and forage fish species". This report would be enhanced if there were references to studies that support this statement. If no studies exist for Lake Toho in particular, then at least use other similar lakes or habitats to support this claim. References are made throughout to the decline in habitat quality that has occurred in Lake Toho and data should be provided to support this.

3.6. DOWNSTREAM (KISSIMMEE RIVER)

✓ This report could be greatly enhanced if this section is expanded to illustrate the connection between the ecosystems of the headwaters lakes and the downstream

river, especially since the restoration project is well underway. There needs to be a discussion of the hydrologic connection and the cause and effect issues. This would be very useful to those who are not intimately involved with the restoration project. Inclusion of this information does not necessarily reduce view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

✓ The potential downstream linkage of the project need to discuss the implications of "no flow" and/or "extended very low flow" regimes on the reconstructed section of the Kissimmee River. Reestablishment of continuous flow is one of the hydrologic criteria for restoration of the river and the authorized project. Continuous flow through the river channel has ecological implications for the restoration of physical, chemical, biological characteristics, and fish and wildlife habitat enhancement within the river channel itself, as well as the floodplain. Reestablishment of floodplain inundation characteristics (another restoration criteria) and associated restoration of floodplain biological communities and fish and wildlife habitat is dependent on continuous flow. These criteria and their linkage to ecological restoration are thoroughly discussed in the 1991 feasibility study that provided the basis for the authorization for the restoration project, so it should be a relatively simple task to use this information to discuss the potential impacts of proposed drawdown.

3.12. NAVIGATION & RECREATION

✓ Based on stage data and observations during the drought of 2001, the absence of flow through the restored section of the Kissimmee River will affect navigation in this area. While this was a natural drought, which is very different than the "ordinary low stage" provision of the 1902 navigation authorization, it is likely that similar effects of a managed lower headwater lake levels could affect flows and associated river stages that may impact the navigation authorization. This report would be greatly enhanced if this information were included. Inclusion of this information does not necessarily reduce the view of positive effects of the drawdown project, however it would eliminate a potentially perceived gap in completing the information assessment.

4.3. INVASIVE PLANT MANAGEMENT PROGRAM

✓ Plant genus names should be capitalized (see Page 24, paragraph 2). For example, Hydrilla should always be capitalized throughout the document.

✓ Page 25. The first paragraph mentioned February, March and April as the preferred chemical treatment months. In reality most of the treatments are done in June, July and August as indicated by the data on herbicide applications (see SFWMD database).

✓ It also mentioned that "since the 1990's, large-scale herbicide treatments have been conducted". The treatments have been conducted since the 1980's according to the data on herbicide applications (see SFWMD database).

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✓ Based upon past experience, it is extremely probable that native and exotic nuisance plants will become established on the in-lake disposal islands if no maintenance program is in place (e.g. Coffee bean (Sesbania) and Dog fennel). An extensive commitment of an exotic and nuisance removal plan including eradication techniques, costs, frequency of visits, chemicals used, and who will do the work needs to be included as a project component. An ongoing monitoring program to address this issue should be set up.

4.5.2. WATERFOWL AND WILDLIFE RESPONSES

✓ Page 27. In the section of waterfowl and wildlife responses, more examples are needed on reptiles and amphibians inhabiting the area as well as the scientific names of quail and dove (just to be consistent with the rest of the paragraph).

✓ Statements are made about the potential improvement of the littoral zone after habitat enhancement, but no data is cited. Please see comments provided for Section 3.4.

✓ Great Egret scientific name has been changed from Casmerodius albus to Ardea alba.

✓ South Florida Water Management District has provided a map of the locations of Bald Eagle nests with regard to the construction activities. A discussion of the buffer zone for eagle nests and how construction activity will occur in the zone is recommended.

✓ Page 28, paragraph 2, spelling *"apply snails"* should read Apple Snails.

4.6.1. SURFACE WATER WITHDRAWALS

✓ "SFWMD staff has researched current domestic and agricultural *water* users in Lake Toho, Lake Hatchineha, Lake Cypress and Lake Kissimmee. There are three existing *water* use permits utilizing surface water from Lake Toho; one *water* use permit utilizing Lake Hatchineha surface water and one water use permit utilizing Lake Kissimmee surface water." P.29

replace "water" with "consumptive"

4.6.3. GROUNDWATER MODELING ANALYSIS

✓ 2nd paragraph, 2nd sentence, edit, " *The Lake Toho ISGM, ~~is~~ based on the Mike/She model results, ~~have~~* has *been proven...*

✓ second line from the top of Page 30; please delete the following phrase "Thus, the modeling, developed by DHI Water and Environment."

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4.7. SPREADSHEET ANALYSIS OF STAGES AND DISCHARGES

✓ Need to provide a further explanation for the "normal year" used in this analysis (e.g., rainfall data).

✓ Figure 4d suggests relatively high discharges from Lake Kissimmee during April-May and moderate flows during most of the following wet season. These are much higher and more consistent flows than are typical during most years and seem very questionable following a drawdown. The basis for these data needs to be explained more clearly and explicitly.

✓ Please clarify where and when the "approved lake regulation schedules contained in the Kissimmee River-Lake Istokpoga Basin Water Control Plan" and "Interim Operating Schedule for Lake Kissimmee" were used.

✓ The "historical 90% flow" criteria is based on flows that were exceeded 90% of the time and as such represent "drought" conditions in the historic Kissimmee. So simply providing these flows is tantamount to providing a drought and lesser flows would be equivalent to an extreme drought. This report would be greatly enhanced if a more thorough explanation on this topic were provided.

4.9. DOWNSTREAM EFFECTS

✓ This paragraph states that 328,000 acre-feet of water will be discharged to the Kissimmee River during the drawdown. Why is this figure different than what is stated in 4.10.2 (90,000 acre-feet)?

✓ Why was the regulation schedule for Alternative 1 used instead of 4w?

4.10.2. DOWNSTREAM EFFECTS (4.10. Water Quality)

✓ There was a spike of nutrient discharge associated with the last drawdown on Lake Kissimmee. The potential for this occurring with the proposed Lake Toho drawdown should be discussed in this section.

4.16. CULTURAL AND ARCHAELOGICAL RESOURCES

✓ Line 11 edit, ", *the Corps has determined that the project will not effect ~~on~~ historic properties...*"

4.17. (2) ANTICIPATED EFFECTS OF PREFERRED PLAN ON THE NATIONAL ECONOMIC DEVELOPMENT

✓ Please change the word pan to plan in the sentence reading "Anticipated effects of preferred pan".

4.17.3. EVALUATION OF PROJECT COSTS

✓ This report would be greatly enhanced if there were a consistent description and evaluation of the base drawdown project (Toho) and the optional additions (additional removal in Toho, Cypress, Hatchineha).

The EIS needs to evaluate one drawdown plan, what ever it is. In this section the Corps is evaluating the proposed 6.7 million cubic yards for all three lakes (Toho, Hatchineha and Cypress). Other sections analyze Lake Toho only, 4 million cubic yards. There needs to be consistency. In each section a different drawdown is described.

✓ If a temporary weir is required in Tiger Creek, the cost to install a temporarily weir at Tiger Creek between Lake Tiger and Lake Kissimmee should be included in the project costs.

4.19. CUMULATIVE IMPACTS

✓ "The cumulative effects of the loss of these wetlands were considered (or will be considered in the case of the permit modification) as part of determining whether or not to issue the Department of the Army Permit number 199805442 (IP-EB)." P.41

4.21. COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

✓ The statement that "stable water levels" have occurred and contributed to problems in Lake Toho is misleading. The upper range of water level fluctuation in the lake has been decreased relative to historic fluctuations, but lake levels are not stable.

4.25. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

✓ Compliance with the Water Resources Development Act of 1992, which authorized the Kissimmee River Restoration Project should be added.

5.1 PREPARERS

Please make the following revision:

Sally Kennedy, ~~Sr. Project Manager,~~ Sr. Planner, SFWMD

5.2. REVIEWERS

Please add the following reviewers from the SFWMD: Lou Toth, Chief Environmental Scientist; Nellie Morales, Biologist; Stefani Melvin, Biologist; George Ogden, Hydrogeologist; Marc Ady, Biologist; Ed Yaun, Engineer; David Birdsall, Land Manager, Doug MacLaughlin, Attorney, and Luna Ergas-Phillips, Attorney.

TABLES

Table 6, Mean Depth of Lakes at Proposed Drawdown Water Levels in Alternative 4W

F-61

✓ There is the potential for Lakes Cypress, Hatchineha and Kissimmee (Lake Tiger also, if weir not constructed) to reach an elevation of 48 feet, NGVD in zone B2. Lake Toho could reach 48.5 feet, NGVD in zone B2. The table needs to reflect the accurate water levels. This is important for freeze protection planning and for permitted consumptive users to know precisely how low the lakes can deviate from the existing regulation schedule and still be discharging down to 48 and 48.5 feet, NGVD respectively.

APPENDIX A- Department of Army Permit

✓ Attachment 9, this attachment presents the disposal areas in Lake Toho. There are proposed inlake disposal areas probably too close to the outlet point of St. Cloud Canal (C-31) and Shingle Creek. They may be subject to high flow conditions especially during high discharge that they will be subject to frequent erosion and scouring actions. Can these sites move further away from those outlets?

Volume II

Page 0-1 Executive Summary, paragraph 2, last sentence
And Page 1-2, paragraph 1, last sentence.

" The present Project is funded by SFWMD in support of Drawdown study"

This sentence is found in both places referenced above. It is unclear and misleading. It should be removed from the document or revised to read:

The Lake Toho Integrated Surface Ground Water Model developed by DHI, Inc was funded by SFWMD to support the FWCC's drawdown project and the U.S. Army Corps of Engineers Environmental Impact Study.

Page 0-1 Executive Summary, paragraph 4, and
Page 1-2 Background objectives, paragraph 3.

This sentence is found in both places referenced above.
Change the tense of the sentence to the past since this modeling was completed last April.

"The objective of the ~~present study~~ modeling effort was ~~is~~ to develop and..."

Page 0-2 Executive Summary, last paragraph

Not clear. Make following changes.

"In summary the findings of the modeling show ~~project is that~~ the extent of the groundwater impact zone..."

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Page 0-3 Executive Summary Map
The map is clearly too small to read. It needs to be enlarged to the full-page size (8.5x11).

Page 1-2 Background Objectives, paragraph 2
" The proposed Lake Toho Drawdown Project ~~study~~ would temporarily..."

Page 3-25 under "Recharge and Discharge" section. The statement, " Along the Kissimmee River Valley in Osceola County the heads in the Floridan aquifer are evidently lowered as a result of discharges to the surficial aquifer". I think this statement is confusing and should be taken out.

Page 3-38, Figure 3-18. This hand drawn graphic is not proportionally right in vertical scale. It doesn't look professional.

Page 5-2, Table 5-1. Portion of prints are illegible due to light color ink.

F-63

Florida Department of Agriculture and Consumer Services
CHARLES H. BRONSON, Commissioner
The Capitol • Tallahassee, FL 32399-0800

Please Respond to:

March 4, 2002

Ms. Liz Manners
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Subject: **Response to Draft Environmental Impact Statement (DEIS) on Proposed Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project**

Dear Ms. Manners:

The purpose of this letter is to provide comments to the Corps regarding the Draft Environmental Impact Statement (DEIS) for the proposed Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project. My staff has reviewed the document and supporting appendices, and the following comments are provided for your consideration:

(1) Page 3, Section 1.8, entitled, "**Permits, Licenses, and Entitlements**"- Lists a Florida Department of Environmental Protection (FDEP) aquatic plant management permit as the sole permit issued in lieu of a water quality certificate. Our understanding is the Alligator Lake extreme drawdown, which was conducted in 2000, required an Individual Environmental Resource Permit (ERP) that was issued to the then Florida Game and Freshwater Fish Commission. Given that Lake Toho is nearly five times as large as Alligator Lake, and the nature and extent of the proposed activities is similar to the aforementioned drawdown, this project should be permitted in a similar manner. In addition, a November 6, 2001 a Final Order (Case No. 01-2900RP) was issued by the Department of Administrative Hearing's Administrative Law Judge clarifying that there is no authority in enabling statutes to allow an agency to except certain lake drawdowns from Chapter 373, Part II (Consumptive Use Permitting) review. For these reasons, the proposed extreme drawdown should be evaluated under the purview of either ERP and/or CUP.

(2) Page 21, Section 3.11, entitled, "**Purpose of Water Regulation Schedule**" - Provides recognition for the fact that water levels in the Kissimmee Basin lakes have been regulated by C&SF project works since the 1960's, with the SFWMD identified as the local sponsor. As such, the proposed Lake Toho extreme drawdown must be consistent with water policies in the 1956 Kissimmee River Basin General Design Memorandum (KRBGDM) and congressionally authorized project purposes, including flood protection, water supply, preservation of fish and wildlife, recreation, navigation, prevention of saltwater intrusion, and water supply to the Everglades National Park. Specifically, we request that the KRBGDM's objective for "provision of water supply for agricultural uses in the area around the lakes and along the Kissimmee River" be recognized in the document.

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(3) Page 29-31, Section 4.6, entitled, "**Surface Water and Groundwater**"- According to our Geographical Information System analyses using 1995 Florida Land Use, Cover and Forms Classification System, the principal land use surrounding Lake Toho is improved pasture, cow/calf operations. Using the document's groundwater drawdown computer modeling prediction, which limits potential impacts to 1.3 miles from the lake, the resulting cone of depression affecting groundwater levels is projected to be approximately 1 foot. Given that the predominant agricultural land use is cow/calf operations, it is not atypical for ranchers to excavate shallow livestock watering ponds for cooling and drinking purposes. In fact, the cow/calf industry's Best Management Practices manual, entitled, "*Water Quality Best Management Practices for Cow/Calf Operations*" specifies the development of alternative water sources to attract animals away from streams, drainage canals, and lakes to protect water quality. For these reasons, the modeled drawdown of livestock pond (surface) water in excess of one foot may be inconsistent with Chapter 40E-2, Florida Administrative Code and the associated Basis of Review criteria.

(4) Page 32-33, Section 4.9, entitled, "**Downstream Impacts (Kissimmee River)**" - Pursuant to SFWMD's Kissimmee River Restoration Project, specifically the completion of the Phase I backfilling of the C-38 canal resulting in the reconnection of approximately 15 miles of historic Kissimmee River channel and subsequent rehydration of thousands of acres of floodplain, the proposed lake drawdown must consider the environmental/hydrological impact(s) to the reconnected portions of the Kissimmee River and more specifically (revised) Operational Schedule flows through S-65 to the river. Published flow data (page 33, DEIS) notwithstanding, there should be more discussion on how the historic 90 percentile flow synchronizes with the revised Operation Schedule flows at S-65.

(5) Page 33-34, Section 4.10.2, entitled, **"Water Quality"** - Assumes a drawdown discharge of 90,000 acre-feet to the Kissimmee River (C-38); however, the previous subsection 4.9 states that "roughly 328,000 acre-feet of water" would be sent downstream. This apparent volumetric inconsistency should be reconciled. Moreover, we concur with the assertion that the long-term benefits for enhanced water storage and water quality improvements should outweigh the potential short-term, temporary water quality impacts of the proposed extreme drawdown on the now adopted, Total Maximum Daily Load for Lake Okeechobee. One significant question that the DEIS should resolve in this regard is whether the overall net phosphorus load analysis includes the potential for increased soluble phosphorus in response to lake rehydration (also known as Reservoir Response).

(6) Page 40, Section 4.18.5, entitled, "**Potential Benefit of Drawdown to Freeze Protection**" - Lists the long-term impact of the drawdown on freeze protection as positive by virtue of removing the dense plant growth/vegetative buffer which forms the littoral zone for Lake Toho. While we agree with the DEIS's assertion that the proposed drawdown facilitates habitat enhancement in the broad littoral zones impacted by the proliferation of nuisance/exotic aquatic plant species along this fringe, we do not agree with the presumption that this vegetation has a significant impact and would "block the direct flow of air from the warm water to the groves". Emergent vegetation notwithstanding, the thermal storage capacity of water in an 18,800 acre open body of water, and its ability to release latent heat, is the "driving force" in providing passive freeze protection to associated agricultural lands. Additionally, land use analysis indicates that the predominant agricultural land use adjacent to Lake Toho is cow/calf operations, not citrus groves as the document indicates.

(7) Page 3-1, Section 3 (Volume II), entitled, "**Model Building**" - Centers around the decision to use the Danish Hydraulic Institute's MIKE SHE integrated computer model to predict impacts and provide reasonable assurance to potentially affected landowners. The Florida Department of Agriculture and Consumer Services recommends that an explanation of the Corps decision to utilize this model over the United States Geological Service's MODFLOW model be included into the Final EIS. Moreover, should the MIKE SHE model assumptions fail and in-situ conditions (i.e., pond water levels) cause a loss to livestock watering infrastructure, a Contingency Plan that addresses both temporary pumping (refilling) activities and/or potential surface water alterations (e.g., deepening existing livestock watering ponds) would be an equitable option that should be clearly explained in the DEIS.

We appreciate this opportunity to provide comments on this important project. Please feel free to contact Mr. Bill Bartnick (850/414-1065) of the Department who is available to work with the Corps to provide additional information or assistance as needed.

Sincerely,

CHARLES H. BRONSON
COMMISSIONER OF AGRICULTURE

Charles C. Aller

Charles C. Aller, Director
Office of Agricultural Water Policy

CCA/aet

cc: Mr. Bill Bartnick
Mr. John Folks
Ms. Cherie Trainor (DCA State Clearinghouse)
Mr. Paul Whalen (SFWMD)

Marjory
Jeb Bush
Governor

Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

February 25, 2002

Jasmin Raffington
State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: USACOE; Draft EIS Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project, Osceola County

SAI: FL200201111375C

Dear Ms. Raffington:

The Florida Department of Environmental Protection has reviewed the above-mentioned Draft Environmental Impact Statement (DEIS) for the Lake Tohopekaliga (Lake Toho) drawdown and habitat restoration project. We have the following comments and suggestions:

In our letter dated December 14, 2000, we stated, *"Since Lake Toho is part of the larger South Florida drainage system, a thorough evaluation of the effects of a drawdown and habitat enhancement should be undertaken, including water quantity and quality as well as the effects on habitat. Extreme drawdowns of upstream lakes have the potential to add nutrient loads to downstream systems. Lake Toho is connected to the Kissimmee Chain of Lakes which drains into Lake Okeechobee."* Within this evaluation in the DEIS, short term turbidity increases are discussed, but no mention is made about the short term spikes in phosphorus concentrations in the water column. These high phosphorus concentrations are likely to be released to the downstream waters of the Kissimmee River and Lake Okeechobee and do have the potential to increase the phosphorus loads of these waterbodies. The net increase of phosphorus loads would depend on the in-lake phosphorus concentrations that will be released from Lake Toho. This may not increase the overall phosphorus concentrations in Lake Okeechobee, however, it is the Department's recommendation that the U. S. Army Corp of Engineers (USACOE) refer to the phosphorus Total Maximum Daily Load (TMDL) that establishes phosphorus loading limits to the lake before releasing the water from the Lake Toho Chain of Lakes. Water should not be released until it is determined that it is within the limits established by the TMDL.

93

The proposal states that 4 million cubic yards of organic material from Lake Toho will be removed with a portion of the material used to create 47 in-lake disposal sites that would total 141 acres. These sites are proposed to be used by wildlife as rookeries for wading birds or resting and basking places for reptiles. The documentation does not include impacts to the Department's Bureau of Invasive Plant Management Program (BIPM). Comparisons between

F-67

94 the benefit to the Florida Fish and Wildlife Conservation Commission's wildlife program and the detriment to the programs conducted by the BIPM, should be made. The documentation states that a study on the Lake Jackson wildlife islands, created in 1994, showed that forty-four plant
95 species were observed. Of the forty-four plant species, please indicate how many were invasive exotic plants controlled by the BIPM.

The BIPM has issued Permit No. SJ-98-498 (*House Bill 57*) to allow removal of up to three feet of muck from the bottom of the lakes. However, if this three-foot limit is exceeded,
96 the Department will require an Environmental Resource Permit (Chapter 373, *Florida Statutes*) from the Department's Orlando Office.

Based on the information provided, the proposed project appears to be consistent with our
97 authorities in the Florida Coastal Management Program. The Department requests a response to the foregoing comments and recommendations. We request that the response to our comments and recommendations be sent through the Clearinghouse for review.

Thank you for the opportunity to comment on this project. If I can be of further assistance, please contact me at (850) 487-2231.

Sincerely,

MCastellanos

Marlane Castellanos
Office of Legislative and Governmental Affairs

MC/

DIVISIONS OF FLORIDA DEPARTMENT OF STATE
Office of the Secretary
Office of International Relations
Division of Elections
Division of Corporations
Division of Cultural Affairs
Division of Historical Resources
Division of Library and Information Services
Division of Licensing
Division of Administrative Services

MEMBER OF THE FLORIDA CABINET
State Board of Education
Trustees of the Internal Improvement Trust Fund
Administration Commission
Florida Land and Water Adjudicatory Commission
Siting Board
Division of Bond Finance
Department of Revenue
Department of Law Enforcement
Department of Highway Safety and Motor Vehicles
Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Katherine Harris
Secretary of State
DIVISION OF HISTORICAL RESOURCES

February 11, 2002

Florida State Clearinghouse
Agency Contact and Coordinator (SCH)
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: DHR Project File No. 2002-302 (2000-9585)
Received by DHR January 15, 2002
Draft Environmental Impact Statement for the Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project, Osceola County, Florida

To whom it may concern:

Our office has received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise Federal agencies when identifying historic properties (listed or eligible for listing, in the *National Register of Historic Places*), assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

It is the opinion of this office that the proposed habitat enhancement project may adversely affect potentially significant archaeological resources. Therefore, an archaeological consultant should be retained to develop a plan for the protection of cultural resources. The archaeological consultant should identify sensitive areas of the lake, which should be avoided by project activities including assessing transportation routes, and should periodically be on site to monitor the project. Furthermore, the monitor should develop a short informational training session for the heavy equipment operators explaining expectations of what might be expected to be found during the demucking activities and steps that should be taken. The consultant should be the contact person should any local residents or the media have questions regarding the cultural resources aspects of this project.

Lastly, the consultant must obtain a Chapter 1A-32 Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research, which can be reached at (850) 245-6444. If you have any questions concerning our comments, please contact Sarah Jalving, Historic Sites Specialist, by electronic mail at sjalving@mail.dos.state.fl.us or at 850-245-6333 or 800-847-7278.

Sincerely,

Frederick P. Gaske, Deputy SHPO

Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

RECEIVED
FEB 19 2002
State of Florida Clearinghouse

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
☑ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

F-69

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

BRADLEY J. HARTMAN, DIRECTOR
OFFICE OF ENVIRONMENTAL SERVICES
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

February 20, 2002

Mr. Mike Murray
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100

RE: SAI #FL200201111375C,
Draft Environmental Impact Statement
Lake Tohopekaliga Extreme Drawdown and
Habitat Enhancement Project, Osceola
County, FL

Dear Mr. Murray:

Staff of the Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the referenced Draft Environmental Impact Statement (DEIS) and offers the following comments.

The FWC is the local sponsor for this project and strongly supports the ecosystem restoration efforts in the upper Kissimmee chain-of lakes. This project will not only benefit the fisheries resources and environmental health of Lake Tohopekaliga, but also provide long-term benefits to fish and wildlife habitat in Lakes Cypress, Hatchineha, and Kissimmee.

Sincerely,

Brad Barnett, Jr.

Bradley J. Hartman, Director
Office of Environmental Services

BJH/RB
ENV 1-3-2
a:\tohio drawdown.wpd

F-70

FLORIDA STATE CLEARINGHOUSE
RPC INTERGOVERNMENTAL COORDINATION
AND RESPONSE SHEET

115

RECEIVED JAN 16 2002

DATE: 1/9/02

SAI#: FL200201111375C

COMMENTS DUE TO CLEARINGHOUSE: 1/11/02 2/10/02

AREA OF PROPOSED ACTIVITY: COUNTY: OSCEOLA CITY:

[ ] FEDERAL ASSISTANCE [X] DIRECT FEDERAL ACTIVITY [ ] FEDERAL LICENSE OR PERMIT [ ] OCS

PROJECT DESCRIPTION

Department of the Army - District Corps of Engineers - Draft Environmental Impact Statement - Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project - Volumes I and II - Osceola County, Florida.

ROUTING:

RPC

X E. CENTRAL FL RPC

PLEASE CHECK ALL THE LOCAL GOVERNMENTS BELOW FROM WHICH COMMENTS HAVE BEEN RECEIVED; ALL COMMENTS RECEIVED SHOULD BE INCLUDED IN THE RPC'S CLEARINGHOUSE RESPONSE PACKAGE. IF NO COMMENTS WERE RECEIVED, PLEASE CHECK "NO COMMENT" BOX AND RETURN TO CLEARINGHOUSE.

COMMENTS DUE TO RPC: 1/11/02 2/3/02

___OSCEOLA

NO COMMENTS: ✓

(IF THE RPC DOES NOT RECEIVE COMMENTS BY THE DEADLINE DATE, THE RPC SHOULD CONTACT THE LOCAL GOVERNMENT TO DETERMINE THE STATUS OF THE PROJECT REVIEW PRIOR TO FORWARDING THE RESPONSE PACKAGE TO THE CLEARINGHOUSE.)

NOTES:

F-71

ALL CONCERNS OR COMMENTS REGARDING THE ATTACHED PROJECT (INCLUDING ANY RPC COMMENTS) SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE CLEARINGHOUSE. PLEASE ATTACH THIS RESPONSE FORM AND REFER TO THE SAI # IN ALL CORRESPONDENCE.

IF YOU HAVE ANY QUESTIONS REGARDING THE ATTACHED PROJECT, PLEASE CONTACT THE STATE CLEARINGHOUSE AT (850) 414-6580 OR SUNCOM 994-6580.

COUNTY: Oscoela

DATE: 01/09/02
COMMENTS DUE-2WKS: 02/10/02
CLEARANCE DUE DATE 03/10/02
SAI#:
FL200201111375C

Message:

STATE AGENCIES	WATER MANAGEMENT DISTRICTS	OPB POLICY UNITS
Agriculture Commuity Affairs Fish & Wildlife Conserv. Comm State X Transportation Environmental	South Florida WMD St. Johns River WMD	Environmental Policy & Ed

The attached document requires a Coastal Zone Management Act/Florida Costal Management Program consistency evaluation and is categorized as one of the following:

Department of Army – District Corpsof Engineers – Draft Environmental Impact Statement – Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project – Volumes I and II – Osceola County, Florida.

Project Description:

___ Federal assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a Consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

TO: **Florida State Clearing House**
XX Agency Contact and Coordinator (SCH)
X 2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(850) 414-6580 (SC 994-6580)
(850) 414-0479 (FAX)

EO. 12372/NEPA
Comment/Consistent
Consistent/Comments Attached
X No Comment
Comments Attached
Consistent/comments Attached
Not Applicable

Federal Consistency
X No

F-72

Not Applicable

From:

Division/Bureau: Florida Department of Transportation, District Five
Reviewer: Peter A. Fatizzi, Technical Applications
Date: 01/28/02

COUNTY: OSCEOLA

Message:

DATE: 1/9/02
COMMENTS DUE DATE: 2/10/02
CLEARANCE DUE DATE: 3/10/02
SAI#: FL200201111375C

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNITS
AGRICULTURE COMMUNITY AFFAIRS FISH & WILDLIFE CONSERV. COMM STATE TRANSPORTATION X ENVIRONMENTAL PROTECTION	SOUTH FLORIDA WMD ST. JOHNS RIVER WMD	ENVIRONMENTAL POLICY/C & ED

RECEIVED
JAN 16 2002
OIP/OLGA

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

— Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

— Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

— Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Department of the Army - District Corps of Engineers - Draft Environmental Impact Statement - Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project - Volumes I and II - Osceola County, Florida.

To: **Florida State Clearinghouse**
AGENCY CONTACT AND COORDINATOR (SCH)
2555 SHUMARD OAK BLVD
TALLAHASSEE, FLORIDA 32399-2100
(850) 414-6580 (SC 994-6580)
(850) 414-0479

EO. 12372/NEPA
☐ No Comment
☐ Comment Attached
☐ Not Applicable

Federal Consistency
☐ No Comment/Consistent
☑ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

F-74

From:
Division/Bureau: Florida Dept of Environmental Protection
Reviewer: Marlene Castellanos
Date: 2/25/02

User: CINDY CRANICK, , Clearinghouse

Project Information

Project: FL200201111375C

Description: Department of the Army - District Corps of Engineers - Draft Environmental Impact Statement - Lake Tohopekaliga Extreme Drawdown and Habitat Enhancement Project - Volumes I and II - Osceola County, Florida.

Keywords: ACOE - DEIS - Lake Tohopekaliga Drawdown, Osceola

Program: 99.997

Review Comments 8/13

Agency: ST. JOHNS RIVER WMD

Date: 03/04/2002 (mm/dd/yyyy)

Description: Not in SJRWMD

Comment Type: ○ Draft ◉ Final

Save

F-75

SAI Routing Sheet

DATE: 01/11/2002

COUNTY: OSCEOLA

SAI#: FL200201111375C

Message:

PROJECT TO BE REVIEWED BY: (Div/Program)	ASSIGNED REVIEWERS (Print Last Name)	IS PROJECT LOCATED IN APPROVED DRI? (Circle Yes/No)				Is Project CONSISTENT w/ COMPLAN?		Is Project CONSISTENT w/ FCMP?		Do you have any COMMENTS on project?		DATE REVIEW COMPLETED	RVWR/ SUPV INIT
		YES		NO									
		Is Project Consistent with DO?		Is Project DRI Scale?		YES	NO	YES	NO	YES	NO		
DCP	RWD	YES	NO	YES	NO							1/15/02	
1/14/02 Date Rec'd			Monitoring Letter?		Monitoring Letter?								
			YES NO		YES NO								
Complete and forward to Div/Prog Below no later than: **2/10/02**													
CMP	Jones	Wetlands?		Stormwater?						✓		1-29-02	
1/17/02 Date Rec'd		YES	NO	YES	NO								
Complete and forward to ACC Coordinator no later than: **2/10/02**													

F-76

RESPONSE TO Dr. John P. Edwards

[redacted]

February 26, 2002

1. This letter states "a programmatic EIS should address the systemic environment beyond the life of the current draw down action and the sustainability of resources..."

   RESPONSE: The Kissimmee Chain of Lakes Comprehensive EIS is currently in progress and will address this issue.

2. States that burning of material could affect aviation, airspace, and aesthetic beauty in the Lake Toho region. Provided detailed information on aviation and airspace issues.

   RESPONSE: Because burning will not be used, these issues do not need to be further addressed in the FEIS.

3. States that EIS should address Environmental Justice.

   RESPONSE: Refer to Section 4.25.20. Also, although fishing on these lakes would not be expected to be high enough to encourage heavy use of the lakes by recreationists (although recreational use of the lakes would be expected to continue), individuals would certainly continue to have success while fishing during the drawdown.

RESPONSE TO Michael Klingensmith

[redacted]

February 28, 2002

4. Suggests that the MIKE-SHE predictive model was incorrect and or incomplete.

   RESPONSE: SFWMD did include topography and make provisions for the Big Bend Swamp in its groundwater-surface water model. The wetlands adjacent to Lakes Alligator, Brick and Gentry, including Big Bend Swamp are simulated in SFWMD's MIKE-SHE model. Topography for the wetlands are represented on a 200 x 200 meter grid. In addition, Russell Ditch, extending eastward and then southward from Lake Gentry into Big Bend Swamp, is represented as an overland flow component in the model. SFWMD's modeling showed that the lake drawdown exerted a cone of influence on the adjacent groundwater to varying degrees depending on distance from the lake, topography, rainfall recharge and time. Their modeling shows that the drawdown did

impact several of the fish farms (i.e, Blackwater, Moonlight) closer to Lakes Alligator and Gentry however, no impact was predicted to the fish farms at Exotic, Castelli or Mako. In the same manner, the MIKE-SHE model constructed for the Lake Toho drawdown project included topography and made provision for Fanny Bass Creek, Fanny Bass pond, the ditch just west of the Florida Turnpike and the two culverts in Fanny Bass Creek.

5. States that his farm would be drained as a result of Toho drawdown based on the Alligator drawdown.

   RESPONSE: There is no evidence that the "test drawdown" of Lake Alligator contributed to the declining water levels at Sunset Tropicals. Modeling showed that the cone of influence of the Lake Alligator drawdown extended to the Blackwater and Moonlight fish farms. Declining pond levels at Sunset Tropicals were due to the drop in adjacent groundwater levels attributable to high evapo-transpiration rates during the spring/summer 1998 and a rainfall deficit in the Kissimmee Upper Basin during the period April 1998 through May 1999 when actual rainfall measured 74 percent of average. Both the Lake Alligator stage and Sunset Tropicals pond levels began to recover in June 1999 with the return of more typical wet season rainfall.

   Likewise, modeling for the Lake Toho drawdown project estimates the extent of the draw-down's cone of influence on adjacent groundwater levels to reach 6000-7000 feet from the lake's edge. Sunset Tropicals is located outside the zone of impact, however, since the fish farm is relatively close to the zone of impact, additional sensitivity analyses were conducted to estimate "potential" impacts at Sunset. Horizontal hydraulic conductivity is the key aquifer parameter controlling the extent of the impact zone and was calibrated to range between 75 to 125 feet/day for the Fanny Creek/Fanny Bass pond area. However, in order to assess whether the aquifer, assuming extreme hydraulic aquifer properties, would enable the draw-down zone to extend as far as Sunset Tropicals, the value of hydraulic conductivity was increased five times (5X) the calibrated value. A multiplication factor of 5 increases the conductivity values around Fanny Bass pond to 500-600 feet/day, corresponding to the properties of coarse sand or gravel sediments. Although these properties are considered unrealistic for the sandy/silty surficial aquifer system that actually exists in the area, their use in the sensitivity analyses would cause the model to overpredict or exaggerate the effects of any potential draw-down at the fish farm. Results of the sensitivity analyses, using the exaggerated and unrealistic aquifer properties under drought conditions, predict a small impact at Sunset Tropicals. The maximum impact at Sunset would occur during the middle of 2003 during the lake refill period and is on the order of 0.3 feet.

6. States that model used for Alligator drawdown was faulty at best. This would make Toho model faulty.

RESPONSE: Numerical hydrologic models that simulate surface water and groundwater processes are the best predictive tools currently available for assessing impacts such as those anticipated for a lake drawdown project. Since models are strictly that, mathematical representations of the real world, it is common to avoid phrases or words within the modeling write-up that connotate absolute certainty. The relative success of a model in representing real-world process is determined by a number of factors including the robustness of the model code, the appropriateness of the model code for a specific application, sufficient input data and the experience and expertise of the individual applying the model. Assuming that the above criteria are reasonably satisfied, the relative ability of the model to replicate real world hydrologic and hydraulic processes (surface water/groundwater flows and stages) is then evaluated during the model calibration/validation process. Once the model is reasonably calibrated, additional sensitivity runs are often made to determine the effects of varying key model parameters (often because there is a degree of uncertainty in the parameter). For the Lake Toho draw-down project, hydraulic conductivity of the surficial aquifer (a measure of how easily groundwater moves through the aquifer) was the model parameter varied. Modeling results show that when increasing the hydraulic conductivity of the aquifer 5x over the calibrated value (meaning there is much less resistance to groundwater flow and an exaggerated effect of the draw-down on groundwater levels in the aquifer) the maximum predicted impact at the Sunset Tropical monitoring well is 0.3 feet. However, when using reasonable or calibrated aquifer parameters, the model shows no impact to groundwater levels at Sunset Tropicals.

7. Questions where is the Environmental Resource Permit (ERP)?
   RESPONSE: Under state law, Chapter 403.813 (2)(R), Florida Statutes, all aquatic plants and associated organic material up to three feet in depth can be removed under an Aquatic Plant Management Permit administered by DEP, Bureau of Invasive Plant Management. Florida Fish and Wildlife Conservation Commission was issued these permits for Lakes Toho, Cypress, and Hatchineha. This type of permit was not used during the Alligator Lake project because the regulatory process had begun prior to the formulation of this statue.

8. Questions where is the Consumptive Use Permit (CUP)?

   RESPONSE: FWC applied for CUP on March 25, 2002.

9. Questions illegally taking of snail kites on Lake Toho.

   RESPONSE: The Corps and US Fish and Wildlife Service have been coordinating the potential impacts of this action under Section 7 of the Endangered Species Act of 1974, as amended, and NEPA.

10. Requests that monitoring wells be placed on Osceola County Tropical Fish Farms.

RESPONSE: A monitoring plan will be developed. Wells would be monitored by the South Florida Water Management District.

RESPONSE TO John T. Rask
[redacted]
March 1, 2002

11. Questions the depth of a house drinking well that will not be affected by the Drawdown?

    RESPONSE: The conclusions from the modeling study indicate that the draw-down related groundwater impact zone does not extend beyond 6000-7000 feet from the Lake Toho shoreline. Within this impact zone, it can be conservatively estimated that a drinking water well with a top of screen elevation (actual depth below the surface would depend on the ground elevation at the well site) less than +48 ft would not be affected by the drawdown. Elevation +48 feet is selected since this is the lowest predicted lake level that Lake Toho will reach during the draw-down project (assuming drought conditions during the draw-down and refill periods).

12. Requests to be added to maillist

    RESPONSE: Name has been be added

13. Questions how much muck will be removed in front of his property and the process that he would have to use to remove muck during the drawdown.

    RESPONSE: North Steer and South Steer Beach are high priority areas to be targeted, but there is no guarantee that aquatic plants or organic material will be removed from your property. A permit would be required from DEP to perform this work on his own. Marty Mann can be contacted at 407-846-5300 for assistance if necessary.

RESPONSE TO Florida Department of Agriculture and Consumer Services
Tallahassee, FL 32399

14. States that the drawdown should be evaluated under a ERP.

    RESPONSE: See question # 7 and #8.

15. Requests that the drawdown be consistent with water policies in the 1956 Kissimmee River Basin General Design Memorandum.

    RESPONSE: Section 3.11 has been revised

16. States that the modeled drawdown of livestock pond (surface) water in excess of one foot may be inconsistent with Chapter 40E-2, Florida Administrative Code and the associated Basis of Review criteria.

    RESPONSE: The general statement concerning cattle-watering ponds and potential impacts from the draw-down project on pond-water levels can only be evaluated if specifics are provided. The location, area and depth of the pond would need to be provided in order to determine potential impacts.

17. States that there should be more discussion in Section 4.9 Downstream Impacts (Kissimmee River) regarding how the 90% flow synchronizes with flows at S-65.

    RESPONSE: Personnel from all involved agencies have worked together to develop target criteria for flows to the Kissimmee River. These target flows are the historic 90% flow at S-65. The historic 90% flow at S-65 is the average monthly flow out of Lake Kissimmee that was exceeded 90% of the time during the period of record 1934-1960. Section 4.9 of the FEIS has been revised to more fully address downstream impacts.

18. DEP has asked for resolution of phosphorous concerns.

    RESPONSE: The EIS water quality sections have been revised to address appropriate parameters of concern to the drawdown.

19. Questions whether the overall net phosphorus load analysis includes the potential for increased soluble phosphorus in response to lake hydration

    RESPONSE: The overall net phosphorous load analysis does include the potential for increased soluble phosphorus in response to lake re-hydration, otherwise known as Reservoir Response.

20. Disagrees with presumption that aquatic plant species along the fringe of broad littoral zones would block the direct flow of air from the warm water to the groves.

    RESPONSE: While it is reasonable to assume that emergent vegetation may not block the direct flow of air from the warm water to groves, dense woody vegetation most certainly could. Woody species such as red maple and willow often overtake herbaceous species in disturbed areas, such as those altered for agriculture. State agencies have

actually been asked by citrus growers to remove trees growing between their groves and the lakefront.

21. States that land use analysis indicates that the predominant agricultural land use adjacent to lake Toho is cow/calf operations, not citrus groves as the document indicates.

    RESPONSE: Section 4.18 was not intended to imply that the predominant land use adjacent to Lake Toho is citrus groves. The Lake Apopka Study is cited due to its usefulness to predict the effect of the drawdown on nearby temperatures, particularly freeze protection. Section 4.17.1 does point out the importance of cattle in the study area.

22. Requests explanation of the Corps decision to utilize this model over the USGS MODFLOW model.

    RESPONSE: The MIKE-SHE model has been used by the SFWMD for the past several years and is being increasingly used in both regional and sub-regional models though out South Florida. The U.S. Army Corps of Engineers Jacksonville District has recently purchased the software.

    Unless specifically stated in its request for proposal or permit application, the Corps does not specify to a public agency or a private interest which model is to be used in its engineering analyses. Each model will be evaluated on its appropriateness for the application. The Corps knowledge of MIKE-SHE is that it is an internationally accepted groundwater-surface water model with three-dimensional capability and considers it appropriate for the application.

    The MIKE SHE model of Lake Tohopekaliga and vicinity meets the Corps expectation of a groundwater/surface water model that would be required from an applicant or project sponsor.

RESPONSE TO Audubon of Florida
100 Riverwoods Circle
Lorida, FL 33857
March 4, 2002

23. States that water level management that benefits the health of the lake should be included in the scoping list since it is identified as the primary problem that created the need for restoration in numerous previous drawdowns of lakes in Kissimmee Chain.

    RESPONSE: Section 1.7 has been revised.

24. Requests removal costs of spoil material be included in EIS and a detailed evaluation of the loss of wetlands due to the creation of spoil islands.

RESPONSE: Estimates of muck removal costs have been provided by FWC. Cost of removing the material is currently very reasonable ($1.09/cubic yard based on the statewide FWC contract used in 2001). This cost is based on a one-way hauling distance of less than one mile. Costs associated with this project become considerably greater once the hauling distance exceeds one mile one way. An example of using FWCs current statewide contract of $1.09/cubic yard and an additional $0.30/cubic yard hauled over the first one-way mile for the Lake Toho project would be (based on the targeted 6,700,000 cubic yards of muck to be removed):

Up to one mile	$7,303,000
Between 1-2 miles	$9,313,000
Between 2-3 miles	$11,323,000
Between 5-6 miles	$17,353,000
Between 10-11 miles	$27,403,000

Specific potential upland disposal sites have not been identified at this time but are being provided during the permit review process (see following paragraph).

This EIS evaluates the impacts of a federal action that in this case would be implementation of a different water regulation schedule (to achieve lake drawdowns). After the lakes are drawdown, proposed de-mucking activities would be undertaken by FWC. FWC must obtain a Department of the Army (DA) Permit to carry out the demucking action and to place the material in wetlands (or in this case the lake[s]). The DA permits will evaluate the muck islands, as well as include an alternatives analysis, 404B evaluation, and cumulative impacts analysis during the permit and public review processes. Refer to Section 1.8 for an explanation of the existing and future permits that would be needed for the work to be accomplished.

25. States that cumulative impact section should address past, present, and future wetland losses from this project and projects in surrounding lakes.

RESPONSE: See response to previous question.

26. States that section 4.9 should be revised to include data that illustrates what percent of flow the restored Kissimmee River is likely to receive compared to average flow

RESPONSE: Minimum desirable daily S-65 flow values for each month were determined by SFWMD staff based upon historical data. These minimum desirable daily flow values, along with the spreadsheet S-65 flow estimates provide a comparison that allows determination of downstream effects. Use of an average flow instead of the

minimum desirable daily flow in the determination of downstream effects would not provide the desired comparison. Refer to Section 4.7 to clarify the use of minimum desirable daily flow values.

27. A pumping alternative may be a better alternative. States that section 4.9 should include an estimate of the risk for Alternative 3 of not providing adequate flows to the Kissimmee River.

    RESPONSE: Alternative 3 was determined to be not feasible so was not evaluated in detail (therefore, no risk assessment will be done for this alternative). Alternative 4W was formulated to protect the Kissimmee River so the risks of this alternative are very low for the Kissimmee River.

28. States that the EIS can be improved by predicting the responses of wading birds and other non-fish wetland dependent species to this project.

    RESPONSE: FWC has contracted with the University of Florida and University of West Florida to study the effects of the 2002-2003 Lake Toho project on wading birds and other wetland dependent species including apple snails. Pre-drawdown data is currently being collected on Lake Toho and will be collected at least two years following completion of the project. The results of their studies would be available for reference in planning future projects. Also, the SFWMD has a Division with a mission to study and monitor the Kissimmee River.

29. Agency prefers Alternative 3 due to perceived risks of Alternative 4W

    RESPONSE: Refer to # 27 above

30. Recommends that all organic material excavated from lake be removed permanently removed (no in-lake disposal)

    RESPONSE: This will be addressed during the Regulatory permit review process (refer to Section 1.8).

31. Recommends that most beneficial regulation schedule be evaluated in the EIS.

    RESPONSE: Only feasible alternatives are evaluated in the EIS,

32. Suggests that the Comprehensive Analysis of the Kissimmee Chain of Lakes Draft EIS team interact directly with the Lake Okeechobee Watershed Project Team in order to ensure that interconnected regions be managed as part of one overall system

RESPONSE: This comment has been forwarded to the appropriate study team for their consideration.

RESPONSE TO United States Department of Interior
75 Spring St. S.W.
Atlanta, GA 30303
March 4, 2002

33. States that the EIS does not thoroughly evaluate an array of alternatives

RESPONSE: All feasible alternatives have been evaluated in the EIS. Sections 4.1.1 and 4.1.2. have been added to help better describe the impacts of the alternatives on the lakes and the Kissimmee River. Other sections of the EIS have also been revised to better evaluate the alternatives.

34. The potential of a pumping alternative to reduce impacts to T&E species was not adequately considered along with the cost.

RESPONSE: Pumping alternatives were not considered feasible since they were eliminated from detailed consideration as too costly by the local sponsor and not available through the Corps operation and maintenance program. In addition to high costs, however, there were also logistical concerns with the pumping alternatives discussed in Sec 2.3.

35. States that the restoration of desirable native aquatic plant life has not clearly been demonstrated to be a direct benefit from the proposed action

RESPONSE: FWC staff has documented positive responses of desirable native vegetation during previous extreme drawdowns and habitat enhancement projects on the Kissimmee Chain of Lakes. The University of Florida documented an increase in species diversity and abundance of desirable natives in a study conducted on Lake Kissimmee following the 1996 drawdown (Effects of Drawdown and Muck-removal Projects on Fish and Macroinvertebrate Communities). FWC will be funding a revegetation project that is budgeted at $300,000 to ensure desirable grasses are reestablished in scraped sites throughout the littoral zone. Currently the macrophyte communities are dominated by native invasive and exotic species. One of the objectives of this project is to remove this community and reestablish a more diverse, native habitat conducive to fish and wildlife primarily comprised of desirable native aquatic plant species.

36. States that proposed water drawdown and planned work by itself has not been shown to promote the restoration of native plant communities without aggressive post-drawdown chemical treatment and mechanical harvesting.

    RESPONSE: see question #35

37. States that analysis and discussion of the DEP aquatic plant summary and summaries presented are questionable.

    RESPONSE: These sections and summaries have been reviewed and revised together with DEP personnel to ensure their accuracy.

38. Suggests clarification of Section 3.2.3

    RESPONSE: This section has been revised.

39. States that the description of the alternatives in Section 2.1 are not presented clearly

    RESPONSE: Section has been rewritten

40. States that if permit is extended for two years, as stated in Section 1.8, the document should address how water levels will be managed if this happens.

    RESPONSE: Under Alternative 4w, beginning September 1 of the second calendar year of the drawdown project, regulation of East Lake Toho, Lake Toho, and Lakes Kissimmee, Hatchineha, and Cypress according to their existing regulation schedules would be resumed. The existing regulation schedules are shown in Alternative 10.

41. States that Section 2.3, Alternatives Eliminated from Detailed Evaluation, contains serious omissions, inaccuracies, and assumptions that appear to be in contrast to the mandates of the CEQ's Implementing Regulations

    RESPONSE: Text in Table 1 has been revised. Table 1 contains all original alternatives considered and the major features required for their implementation. This table was not intended to include detailed descriptions but a summary for the reader's general understanding of each alternative and how they compare with each other.

42. States that Section 3.1, Existing Conditions, should provide citations to support some of statements made.

    RESPONSE: Citations have been added.

43. States that Section 3.4, Fish and Wildlife Resources, should provide supporting citations for statements indicating a decline in desirable aquatic plants, plankton, insects, amphibians, forage fish, sport fish, waterfowl, and wildlife that have been attributed to dense growth of nuisance vegetations

    RESPONSE: This section has been revised.

44. States that Section 3.7, Water Quality, should provide a basic summary of historical trends and current water quality status, the major nutrient sources for the lake, and the current efforts to improve water quality of Lake Toho

    RESPONSE: In section 3.7, Water Quality, a case history of Lake Tohopekaliga, Florida historical trends and water quality status for the past 40 years including major nutrient sources for the lake and current efforts how to improve water quality is documented in Williams, V.P. 2001. Effects of Point-Source Removal on Lake Water Quality: A Case History of Lake Tohopekaliga, Florida. Lake and Reservation Management Volume 17 (4): pp 315-329.

45. States that since drawdown will effect other lakes besides Lake Toho, the effects to these lakes (Cypress, Hatchineha, Kissimmee) should be documented also

    RESPONSE: Relatively speaking, Lakes Cypress, Hatchineha, and Kissimmee will not be drawn down to an extreme low for this project. Refer to Section 4.1.1. which has been added to describe the effects of the drawdown on these lakes. Under Alternative 4w, Lakes Cypress, Hatchineha, and Kissimmee would be dewatered to their normal low pool of 49.0' NGVD early (by February 15th). If water levels are lowered beyond 49.0' to 48.5' NGVD for downstream restoration efforts, the elevation would still be within the approved normal low pool schedule which occurs every one in three years. If water levels reach the lowest regulation schedule elevation in the Lake Toho project regulation schedule, Lakes Cypress, Hatchineha, and Kissimmee would be at 48.0' NGVD, or 0.5' below normal low pool. This does not constitute and extreme drawdown for these three lakes.

46. States that effects on vegetation in lakes Cypress, Hatchineha, and Kissimmee should be discusses in Section 4.2

    RESPONSE: This section (as well as Section 3.2) has been revised.

47. States that section 4.5.1 should be revised to appropriately address fishery responses to the drawdown.

    RESPONSE: Section has been revised

48. States that Section 4.5.2, Waterfowl and Wildlife Responses, does not provide an adequate discussion of the expected responses of waterfowl, wildlife, and invertebrates as a result of the proposed action.

    RESPONSE: Section has been revised

49. States that Section 4.5.3, Disposal Sites, does not present enough information in order to adequately address the environmental effects of disposal sites

    RESPONSE: See question #24. Section 4.5.3.has been revised. The environmental effects of inlake disposal are evaluated in detail during the Department of Army permit process through the Corps Regulatory program. Refer to Section 1.8 for an explanation of the permits that are issued or which are being sought.

50. States that Section 4.11, Hazardous, Toxic, and Radioactive Waste, does not present sufficient information to make any judgments regarding the presence or absence of harmful levels of contaminants or pesticide residues in Lake Toho sediments.

    RESPONSE: The acceptability of the sediments for use as in-lake disposal islands will be determined through the Regulatory process. The Corps Regulatory office is working with FWC to determine the acceptability of the material for use as islands. To date the Corps not seen evidence that the sediments contain HTRW based on information provided by FWC.

51. States that Section 4.19, Cumulative Impacts does not provide a complete summary of the cumulative impacts of this project

    RESPONSE: This section of the EIS has been revised.

52. The amount of muck removal proposed in all the permits would set a precedent.

    RESPONSE: The primary purpose of this EIS is to evaluate the lake drawdowns. The potential for the muck removal activity to set a precedent will be addressed through the permit process through the Corps Regulatory authority.

53. States that compliance with Executive Order 13186 should be added to Section 4.25

    RESPONSE: This section of the EIS has been revised. This E.O. was actually addressed in the DEIS in paragraph 4.25.17 but was not identified explicitly as executive order to Protect Migratory Birds. This order directs federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement, within two years, a Memorandum of Understanding (MOU) with USFWS that shall promote the conservation of migratory bird populations.

54. States that a revised draft EIS should be circulated for review.

RESPONSE: The comments provided in the DOI letter are addressed, as appropriate, in the FEIS but a revised draft EIS will not be prepared and circulated, as suggested. If the U.S. Environmental Protection Agency (USEPA) had determined that the DEIS was insufficient then a revised draft would have been prepared. However, USEPA did not make this determination when they provided their comments on the DEIS (refer to the following letter from USEPA).

RESPONSE TO United States Environmental Protection Agency
Atlanta Federal Center
61 Forsythe St
Atlanta, GA 30303

55. States that additional information is required to demonstrate that Alternative 4w is the most practicable alternative with the least adverse impacts on the aquatic ecosystem and that the impacts of each of the drawdown scenarios (duration and lake levels) should be described.

REPSONSE: Section 2.3, Alternatives Eliminated From Detailed Evaluation, has been revised to better explain why the pumping alternatives were eliminated from detailed evaluation. To summarize, the basis for eliminating pumping alternatives is two-fold:

1. An estimated cost to rent the pump(s) to reach the target elevation is approximately $1,000,000 and does not include the infrastructure costs to run, install, or maintain the pumps. These are additional costs that the Director of the Division of Fisheries has stated that FWC cannot provide funding for. Based on a cost estimate of $1.50 per cubic yard of material removed, the budget for completing the Lake Toho project is in excess of $10,000,000. This exceeds the current funds that FWC has for the project ($5,700,000). Additionally, members of FWC in Tallahassee feel strongly that all FWC funds allocated to the project should be used for enhancement activities only and not be diverted to moving water via temporary pumps when this can be accomplished at no cost with gravity flow.
2. There is also doubt whether or not the use of pumps could satisfactorily maintain water levels at the target elevation if rainfall occurred during the project. This is a risk that could greatly jeopardize the success of the project. Compromising to a low pool of 49.0' NGVD instead of 48.5'NGVD as proposed could jeopardize the overall success of the project as well.

Section 4.1.1 has been added to help more fully describe the impacts of the drawdown scenarios on each of the lakes. As described in this section, by far the largest impact of the drawdown is on Lake Toho relative to impacts on the other lakes based on the existing regulation schedules.

56. States that the document should describe the alternatives in terms of how they relate to the 1977 Lake Management Plan for the Kissimmee Chain of Lakes and the Corps *Comprehensive Analysis of the Upper Kissimmee Chain of Lakes.*

    RESPONSE: The impact of the drawdown on all the lakes is discussed in Section 4.1.1. This drawdown is compatible with the management purposed over the 12 year period referred to in the Kissimmee Chain of Lakes Management Plan.

57. States that document should present trade-offs associated with in-lake disposal vs. a transport option, since the proposed alternative would result in the conversion loss of important littoral wetland habitat to disposal islands

    RESPONSE: Refer to #24.

58. A rating of EC-2 has been assigned to this EIS. This means that USEPA has environmental concerns about the project and EIS that require additional information for resolution.

    RESPONSE: The FEIS has been revised to address these concerns. All respective agencies have worked together to address the concerns raised about the EIS and the proposed project.

RESPONSE TO Guy & Yudin, Attorneys at Law
55 E. Ocean Blvd
Stuart, FL 34995
November 15, 2001

59. References final order from Case No. 01-2900RP which states that a drawdown requires a consumptive use permit

    RESPONSE: See question # 8

60. Suggests hydraulic dredging instead of scraping muck for removal

    RESPONSE: Hydraulic dredging is a good choice for removing organic material if a lake cannot be drawn down and the objective of the project is to remove sediments in deeper

areas of the lake. Hydraulic dredging is not a good choice in water depths less than three feet (the area where FWC has targeted muck removal in lake Toho). The cost of hydraulic dredging is much higher than the cost associated with a drawdown and mechanical scraping. Disposal of the material is even harder due to the excessive amount of water associated with the organic material. Often hydraulic dredging comprises 5-15% solids and the rest is very turbid water. Suspended sediments in the pumped water have to settle out, requiring a massive upland storage area. Upland storage area is not readily available.

RESPONSE TO South Florida Water Management District
Orlando Service Center
1707 Orlando Central Parkway, Ste 200
Orlando, FL 32809

Suggestions to add text and editorial comments were made, as appropriate, without special note in the following section of the FEIS.

61. States that section 1.6 of the EIS should address Lakes Cypress, Hatchineha, and Kissimmee (if they will be lowered) in EIS.

    RESPONSE: Refer to question #45

62. Questions the criteria for the weir mentioned in Alternative 1 for Lake Tiger

    RESPONSE: A temporary structure was constructed in Tiger Creek to prevent an excessive lowering of Lake Tiger during the 1995-96 Lake Kissimmee extreme drawdown, in which the target drawdown elevation for Lake Kissimmee was 45.0 ft NGVD. The existing, approved regulation schedule for Lake Kissimmee requires that water levels be lowered each spring; the regulation schedule reaches 49.0 ft NGVD by June 1st and, one year in three, reaches 48.5 ft NGVD. A temporary structure in Tiger Creek was not constructed for previous extreme drawdowns of Lake Toho. In the proposed Lake Toho extreme drawdown, under Alternatives 1 or 4w, the lowest regulation schedule elevation for Lake Kissimmee is 48.0 ft NGVD. As can be seen in Figures 13 and 14, historically it has not been unusual for the stage in Lake Kissimmee to reach approximately 48.0 ft NGVD. The elevation of 48.0 ft NGVD is close to the range of the existing Lake Kissimmee regulation schedule, and the extent of drawdown for Lake Kissimmee under Alternatives 1 or 4w would be considerably less than in the 1995-96 Lake Kissimmee extreme drawdown. Therefore, it appears that construction of a temporary structure in Tiger Creek will not be necessary for the proposed Lake Toho extreme drawdown. Mention of a temporary structure in Tiger Creek has been deleted from document based on this information.

63. Asks which regulation schedule the no action alternative (Alt 10) is based upon.

RESPONSE: Alternative 10, The "No Action Plan", is based on the interim regulation schedules currently in place. The interim regulation schedule for Lakes Kissimmee, Hatchineha, and Cypress proposed in the U.S. Army Corps of Engineers Section 1135 report on Headwaters Revitalization has not been implemented since all physical features are not complete. The interim regulation schedule for Lakes Kissimmee, Hatchineha, and Cypress and Lake Tohopekaliga were adopted on 1 December 1981. These interim regulation schedules have two zones: Zone A and Zone B. Within Zone B of the interim regulation schedule for Lake Kissimmee, SFWMD has developed operating criteria to send water to the river to augment the river restoration project. These operations are within the States water supply authority to allocate water.

64. States that the document should address the effects of proposed project on the Kissimmee River Restoration Project.

RESPONSE: Section 4.1.2 has been added and addresses this concern. Section 4.9 has also been revised.

65. States that information regarding potential algae blooms should be included

RESPONSE: In Vincent P. Williams article titled Efforts of Point-Source Removal on Lake Water Quality: A Case History of Lake Tohopekaliga, Florida, Lake and Reservation Mangement. 2001, 17 (4): 315-329. it is stated that by 1979, annual phosphorus loading to the lake (Toho) was eleven times higher than under natural conditions and nitrogen loads had nearly doubled since the 1960's due to urbanization around the lake. Efforts to reduce phosphorous concentrations in effluent from the four largest point sources began in 1982, followed by complete removal of all wastewater treatment plant discharges by 1988. By 1998, Lake Toho had experienced reductions in total phosphorus (80 %), ortho-phosphorus (95%), total nitrogen (50%), and chlorophyll a (30 %). Also measurable improvements in water quality were also documented for downstream lakes Cypress, Hatchineha, and Kissimmee. Since algae blooms are directly related to the presence of excessive nutrients in a lake the reductions of these nutrients should yield lesser potential algae blooms.

66. States that an explanation of proposed low lake elevation of 48' NGVD rather than 50-51' NGVD should be presented based on historic ranges of water level fluctuation in Lake Toho

RESPONSE: Prior to flood control in the 1960's, Lake Toho historically reached an extreme low of 48.05 feet NGVD in 1956. The drawdowns are meant to mimic natural lows that occurred in the past. The elevation of 48.5 feet NGVD, originally proposed for

this project was based on previous extreme drawdown elevations that allowed the FWC to mimic a natural low (albeit not exactly). Lower lake water levels ensure the lake substrate will dry out to enhance the oxidation processes throughout the entire littoral zone (which was achieved at elevation 48.5 feet NGVD), maximize seed germination of desirable grasses and late increase work efficiency of heavy equipment on dry lake bottom.

67. States that data, references, or studies to support information presented in Fish and Wildlife Resources section would enhance report

    RESPONSE: Section 3.4 has been revised.

68. Suggests including discussion of the hydrologic connection between the headwater lakes and the downstream river (Kissimmee).

    RESPONSE: Alternative 4W was developed to provide target flows (identified by key staff at the SFWMD) to the Kissimmee River and, based on model output, has accomplished this objective. A comparison of Figures 4d and 5d indicate that Alternative 4W provides improved target flows to the river over existing conditions. Meeting these target flows along with continuing the existing monitoring program administered by the SFWMD will insure that the Kissimmee River is protected. That is an important goal of the preferred alternative. Section 4.9 has been expanded, with the assistance of SFWMD personnel, to better describe the effect of the proposed drawdown on the Kissimmee River.

69. Requests inclusion of information on impacts to navigation

    RESPONSE: In Section 9.8.9 of the report titled Environmental Restoration, Kissimmee River, Florida, Final Integrated Feasibility Report and Environmental Impact Statement dated December 1991, it was stated that:

    Channel depths in the restored river will depend on the availability of flowing water; thus, wet and dry seasons will have an effect on navigation. During extremely dry periods, the three-foot channel depth for navigation may be reduced due to low flows.

    If it appears that during the Lake Toho extreme drawdown or refill periods there will be a temporary decrease in navigability on the restored section of the Kissimmee River between S-65A and S-65C, then a Notice to Navigation Interests will be issued to alert boaters of the situation.

70. States that management plan for exotics should be included as a project component

    RESPONSE: This is addressed in Section 4.3

71. States that more references should be cited in section 4.5.2, Waterfowl and Wildlife Responses, and also more animals inhabiting the area should be listed.

RESPONSE: Refer to question/response #28

72. Suggestions for clarifying Section 4.7, Spreadsheet Analysis of Stages and Discharges

RESPONSE: Section 4.7 has been revised

73. Questions why regulation schedule for Alternative 1 was used in section 4.9, Downstream Effects, rather than regulation schedule for Alternative 4w

RESPONSE: The volume estimate of roughly 328,000 acre-feet was conservatively based on the initial water level lowering in Alternative 1 rather than Alternative 4w. The alternative with the greatest initial volume of water discharged (Alternative 1) was used to emphasize the relatively limited effect of the drawdown project on the Lake Okeechobee stage. Under any of the other alternatives, the effect on the Lake Okeechobee stage would be less.

74. Suggests that an explanation for the spike of nutrient discharge associated with the last drawdown on Lake Kissimmee be discussed in Section 4.10.2, Downstream Effects, Water Quality

RESPONSE: Lake Kissimmee's last drawdown occurred in 1996. When a lake drawdown event occurs there is an increase of nutrient discharge in the downstream path receiving bodies of water. The increase levels of nutrients loading will be mostly total Nitrogen and Phosphorus. The presence of Cyanobateria, a free-floating algae, in Florida lakes are capable of directly fixing dissolved nitrogen gas and phosphorus present in surface waters (Williams, V.P., 2001)

75. Evaluation of project alternatives should be consistent.

RESPONSE: Portions of the EIS have been revised to address this comment and better explain how the drawdown and permit to remove muck are related but separate actions.

76. Table 6 needs to be revised to reflect the potential for Lakes Cypress, Hatchineha, and Kissimmee to reach an elevation of 48 feet, NGVD

RESPONSE: The table reflects the February 15 (target drawdown) elevations of 49.0 ft NGVD in the proposed regulation schedules for Lake Toho and Lake Kissimmee, Hatchineha, and Cypress under Alternative 4W. Henry et al. (1994) note that for Orlando the approximate end of the freezing season is 19 February, and it seems reasonable to

utilize the February 15 elevations in Table 6 based on the idea that February 15 is roughly at the end of the freezing season for the above lakes. Use of 49.0 ft NGVD in Table 6 appears to be appropriate because water levels are expected to be higher than 49.0 ft NGVD during most of the freezing season. Additionally, it appears likely that water levels will be above or approximately at 49.0 ft NGVD throughout the freezing season, even if the freezing season is considered to end in late February or early March. However, we concur that Lake Tiger should be included in the freeze protection analysis and Tables 4, 5, and 6 have been modified to include Lake Tiger.

77. States that some in-lake disposal areas shown in Appendix A appear too close to the outlet point of St. Cloud Canal (C-31) and Shingle Creek

RESPONSE: Issues with disposal sites will be addressed through the Corps permit authority. A disposal site in this location will be avoided if this concern is accurate.

RESPONSE TO Donald Walther
Blackwater Fishery Inc.
3460 Hickory Tree Rd.
St. Cloud, FL 34772

78. Questions CUP or ERP permits

RESPONSE: See questions 7 and 8.

79. Questions whether or not navigation will be possible or not

RESPONSE: Section 4.14 of EIS, Navigation and Recreation, has been revised to address above question. See also # 69.

80. Suggests that the project may impact snail kites.

RESPONSE: Snail kite issues are being addressed through coordination with US Fish and Wildlife Service (refer to Appendix G).

81. States that with modeling used in this project, Corps should know exactly what is going to happen with the ground water within the project area.(Section 3.5). States that canal on his farm was dry only during previous drawdowns of Lake Toho and on no other occasion.

RESPONSE: The statements in Section 3.5 Ground Water of the DEIS explain that there are several ways for groundwater to be discharged from the aquifer. One is by evapo-

transpiration to the atmosphere and the other is by groundwater movement in the direction of a declining hydraulic gradient. One way to create a hydraulic gradient in the adjacent aquifer is if water levels within a surface water body are lower than the groundwater levels in the adjacent aquifer. While this situation will promote drainage of groundwater towards the lake, the distance away from the lake that the drainage effect is ultimately experienced depends on a number of factors including rainfall recharge, aquifer properties, surface topography, drainage features, the lake draw-down level and time. All of these factors can be represented in a numerical computer model and have been done so for the Lake Toho draw-down project.

Also, the mere presence of a surface drainage feature extending from a surface body of water does not imply that groundwater resources will be overdrained towards the surface body of water. In order for the drawn-down lake level to promote overdrainage of groundwater to a periphery drainage feature (i.e., a canal/ditch/creek flowing into the lake), the invert (bottom elevation) of the drainage feature must be as low as the drawn-down lake level. This principle is typically seen when agricultural interests adjacent to lakes construct a series of drainage ditches (with bottom elevations lower than the lake levels) in order to lower the groundwater in the agricultural lands to a stage approximating the lake level. For example, in Fanny Bass Creek, there are two culverts between Lake Toho and the Turnpike. The culvert closest to Lake Toho has an invert elevation of 53.6 feet. As soon as Lake Toho falls below elevation 53.6 feet, the lake level no longer has a direct influence on surface water levels in Fanny Bass Creek upstream of the culvert. Similarly, in Blackwater Ditch, there is a culvert with invert elevation of 68.1 feet. When Lake Alligator levels are below elevation 68.1 feet (which is all the time), the lake has no direct influence on surface water levels in Blackwater Ditch upstream of the culvert. The only potential influence the drawn-down lake can have on water levels upstream of these culverts is through seepage of groundwater towards the lakes. This draw-down influence has been quantified by the computer model and predicts impacts on groundwater levels up to 6,000-7,000 feet away from Lake Toho.

82. States that no mitigation has been offered for impacts as mentioned in Section 4.6

RESPONSE: FWC and SFWMD are currently drafting an MOU that will include mitigation, if appropriate, for consumptive use permittees that already exist on Lake Toho. There are three CUP users outstanding that are allowed to withdraw surface waters from Lake Toho. All three permittees have been contacted and they have stated that at elevation 49.0' or 48.5' NGVD, little or no mitigation will be necessary (i.e., pump elevation and canal depth elevation are lower than target lake level elevation).

83. States that saltwater intrusion or up coning was not addressed in document

RESPONSE: Saltwater intrusion may occur in Florida in three ways. The first, coastal seepage, is caused by the difference in density between saltwater and freshwater. A

second source of saltwater is residual seawater trapped in an aquifer during deposition or as the result of high sea levels during interglacial periods or the effects of storm tides. Saltwater anomalies of this type occur in Water Conservation Area 3, beneath Lake Okeechobee and in coastal Collier County. Uncontrolled discharge from thousands of abandoned wells, which tap the brackish waters of the Floridan aquifer system, is the third source of saltwater contamination. This problem was most acute in South Florida, however, the Water quality Assurance Act of 1983 required the permanent plugging of abandoned saline wells.

A good reference for this information is USGS Water Resources Investigation Report 92-4076 ("Geohydrology of Osceola County, Florida"). Within the surficial aquifer in Osceola County, localized concentrations of saline water (>250 ppm chloride) can occur where saline Floridan aquifer water is introduced by irrigation or leaking well casings. No saline water (close to or greater than 250 ppm chloride) occurs in the Upper Floridan aquifer within about 12 miles of Lake Toho. In the county as a whole, saline water occurs within the Upper Floridan in the northeast (~30 miles from Toho) and central (~12 miles from Toho) parts of the county. This salt water is substantially residual ancient sea water trapped in the sediments.

Saltwater intrusion and upconing are not considered to be major risks in the project area.

84. States that with the amount of water that will be released through the newly restored Kissimmee River Project may pose a problem concerning water quality

RESPONSE: The proposed action should not adversely impact water quality in the Kissimmee River. Waters released from Lake Toho watershed have significantly lowered TP and TN since 1979 due to removal of point source discharges (Williams, 2001).

RESPONSE TO Department of Environmental Protection
Bureau of Invasive Plant Management
3900 Commonwealth Blvd
Tallahassee, FL 32399
March 11, 2002

85. Suggestions for revisions to two sections (3.2 and 4.2) of the DEIS on vegetation were provided. Requested name be removed as author of DEIS.

RESPONSE: The sections on vegetation in the FEIS have been revised. Requestor's name has been removed from the EIS.

RESPONSE TO State of Florida, Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32366
April 16, 2002

86. Refers to comments made by SFWMD letter dated March 8, 2002.

    RESPONSE: Comments made by SFWMD have been addressed to in this section, numbers 61-77

87. Refers to comments made by Florida Department of Agriculture and Consumer Service letter dated March 4, 2002.

    RESPONSE: Comments provided by this letter were addressed in this section, numbers 14-22.

88. States that DEP recommended a thorough evaluation of the effects of the proposed drawdown and habitat enhancement including impacts to downstream water quality and quantity. The DEIS does not address the potential for increased phosphorous loading to the downstream system

    RESPONSE: The FEIS has been revised to address this concern.

89. States that the benefits of the proposed in-lake disposal sites should be compared to the potential cost of increased invasive plant management efforts.

    RESPONSE: Benefits/detriments of the disposal islands will be evaluated during the permit process. Management plan for invasive plant management on the disposal islands will be developed as needed.

90. Refers to comments made by Department of Environmental Protection concerning Environmental Resource Permit # SJ-98-498 which permits removal of up to three feet of muck.

    RESPONSE: FWC is aware of this permit requirement and will insure that all appropriate permits are obtained prior to doing any work.

91. States that Department of State notes that the habitat enhancement project may adversely affect significant archaeological resources and will require additional attention

    RESPONSE: The FWC will be required to retain an archeological consultant to develop a plan for the protection of historic properties. The professional archeologist will identify

areas that may contain historic properties and these areas will be avoided by project activities. The archeologist will periodically conduct on-site to monitoring of the project to insure the protection of historic properties. The archeologist will develop and conduct informational training sessions for heavy equipment operators at the site to explain what resources may be encountered and what steps should be taken if historic properties are discovered. The archeologist will obtain a Chapter 1A-32 Archaeological Research Permit from the Division of Historical Resources, Bureau of Archaeological Research.

92. States that the project appears to be consistent with the Florida Coastal Zone Management Program

RESPONSE: Concur.

RESPONSE TO Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399
February 25, 2002

93. Short term spikes in phosphorus concentrations in the water column should be addressed in the EIS

RESPONSE: The EIS has been revised and water quality impacts of the proposed action are addressed as appropriate.

94. Impacts to DEPs Bureau of Invasive Plant Management (BIPM) Program should be addressed. Benefits to wildlife and detriments to the invasive plant program should be compared.

RESPONSE: The proposed muck removal project on Lake Toho would not be expected to negatively impact the existing invasive plant (aquatic and upland) management programs within BIPM.

95. How many of the forty-four plant species that became established on islands created on Lake Jackson were invasive exotic plants controlled by the BIPM Program.

RESPONSE: Table has been added that addresses this question (Table 3e)

96. States that BIPM has issued permit number SJ-98-498 that permits removal of up to three feet of muck. If the three-foot limit is exceeded then an Environmental Resource Permit will be required.

RESPONSE: Same response as # 90

97. States that the project appears to be consistent with the Florida Coastal Zone Management Program and that responses to the comments and recommendations provided by the State Clearinghouse agencies be sent through the Clearinghouse for review.

RESPONSE: The Final EIS, which contains this detailed comment/response section to comments received on the DEIS, will be provided to the State Clearinghouse for review.